SEPTEMBER 20, 1954

How to Improve Freight Operation . . . p. 61

RAILWAY AGE

One of Five Simmons-Boardman Railway Publications

IN THIS ISSUE:

Selective Consolidation Advocated for Railroads

Erie Renovates Chicago Freighthouse

What's Ahead For Supervisors?

Revenue and Expense Tables

How to Avoid Government Ownership

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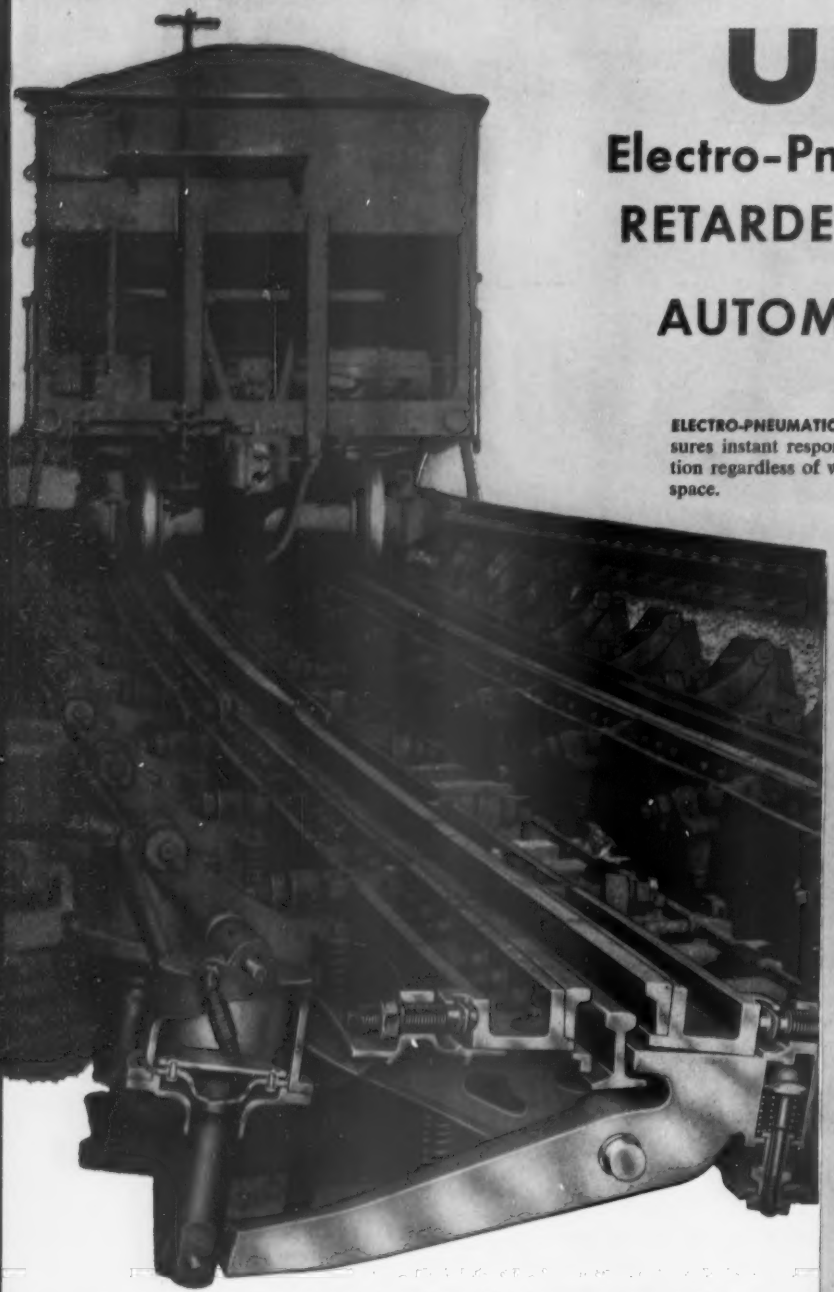

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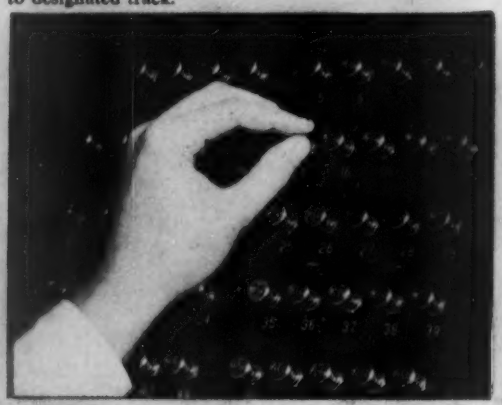
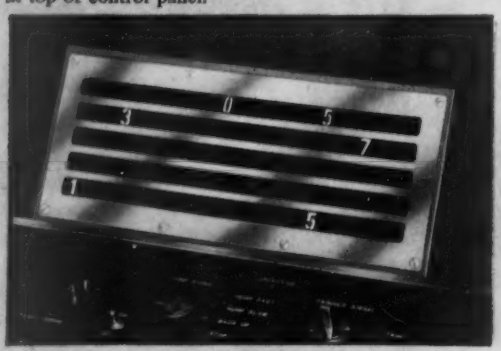
PRESSING ONE PUSHBUTTON on the UNION control panel automatically positions switches as cut of cars proceeds to designated track.



ADVANCE SELECTION of routes for as many as five cuts can be made. Selected routes are registered on indicator at top of control panel.



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Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn., under the Act of March 3, 1879. Name registered in U. S. Patent Office and Trade Mark Office in Canada. Simmons-Boardman Publishing Corporation: James G. Lyne, president. Samuel O. Dunn, chairman emeritus. J. S. Crane, vice-president and secretary. Harry H. Melville, C. W. Merriken, John R. Thompson, William H. Schmidt, Jr., J. S. Vreeland, Fred W. Smith, Robert G. Lewis, vice-presidents. Arthur J. McGinnis, executive vice-president and treasurer. Ralph E. Westerman, assistant treasurer.

September 20, 1954 **Vol. 137, No. 12**

Week at a Glance

Railroads have protested extension of first-class air mail experiments. The 69 chief mail-handling roads have demanded a "full hearing" before the Civil Aeronautics Board, claiming extension of the tests through 1955 would cost the railroads $1,000,000. 9

The Seaboard Air Line has filed suit asking suspension of a recent ICC order that the SAL and the Atlantic Coast Line provide for interchange of freight traffic at Jacksonville, Fla. 10

Santa Fe President Gurley, speaking before a Chicago Board of Trade symposium, stated that enforced union membership is "an intolerable deprivation of liberty" and that unions seek, not to serve members, but to dominate them. 12

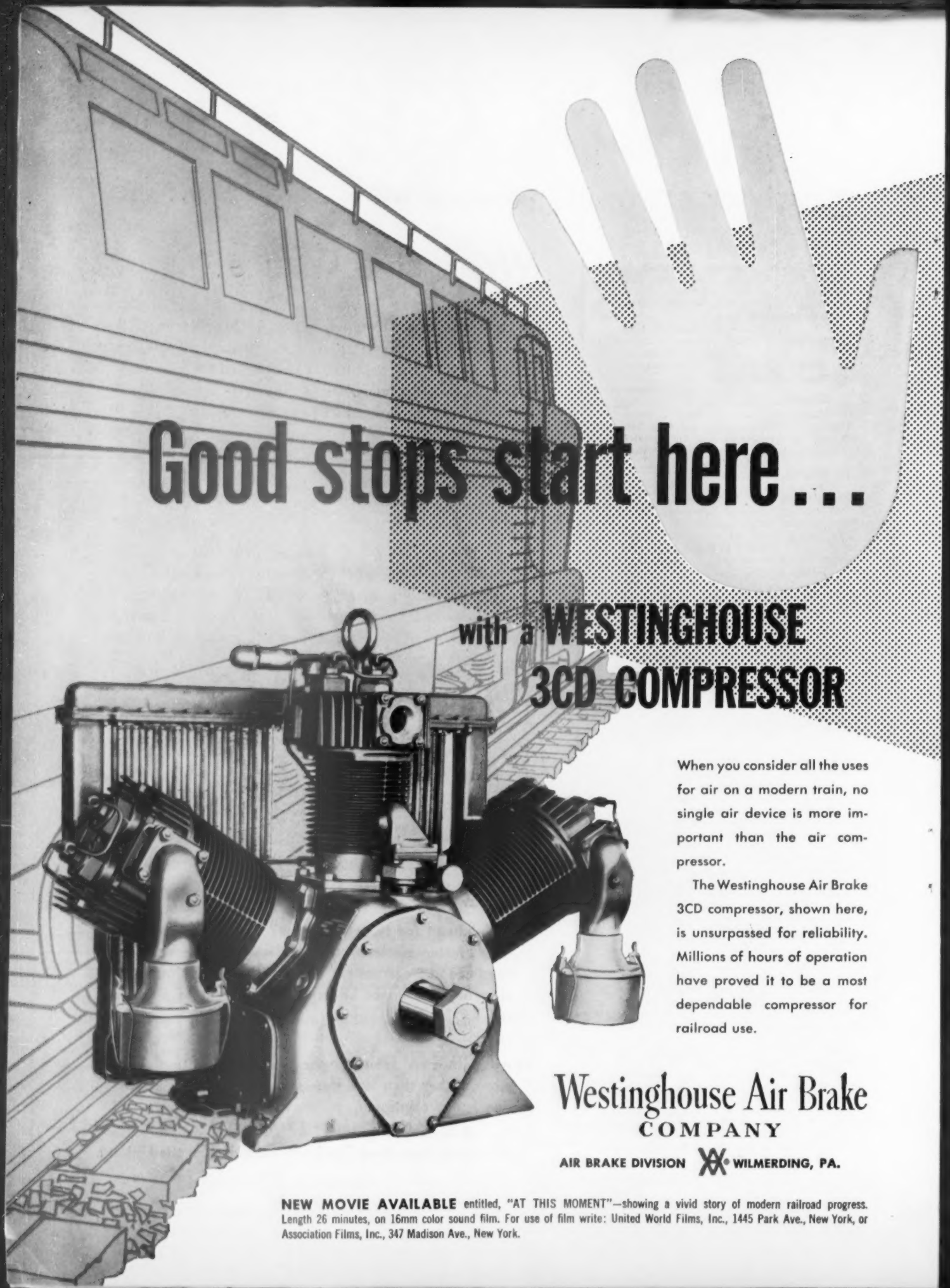
FORUM—How best avoid government ownership? If other forms of transport continue to have free access to the public purse, ought not the railroads, seeking equality, explore the possibility of gaining tax credits for fixed property improvements? 55

The walls were bulging (almost) at the Erie's Chicago freighthouse. Switch to mechanized operation resulted in more capacity and higher efficiency. 56

What's ahead for the supervisor? Plans for cost control, greater efficiency and better employee relations discussed at Roadmasters' and B&B meeting along with view of what might be expected in event of H-bomb attack. 58

How to improve freight operation. Investigation shows more, rather than less, time spent on air brake inspection is one solution. 61

Gas-turbine operation has been extended on the Union



When you consider all the uses for air on a modern train, no single air device is more important than the air compressor.

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Current Statistics

Operating revenues, seven months	
1954	$ 5,389,093,368
1953	6,253,221,966
Operating expenses, seven months	
1954	$ 4,316,285,150
1953	4,724,355,127
Taxes, seven months	
1954	$ 509,494,449
1953	749,901,499
Net railway operating income, seven months	
1954	$ 416,325,817
1953	643,223,357
Net income, estimated, seven months	
1954	$ 272,000,000
1953	490,000,000
Average price railroad stocks	
September 14, 1954	70.54
September 15, 1953	57.43
Carloading, revenue freight	
Thirty-six weeks, 1954	23,008,204
Thirty-six weeks, 1953	26,712,284
Average daily freight car surplus	
Week ended Sept. 11, 1954	74,134
Week ended Sept. 12, 1953	12,381
Average daily freight car shortage	
Week ended Sept. 11, 1954	611
Week ended Sept. 12, 1953	3,205
Freight cars delivered	
July 1954	1,801
July 1953	6,370
Freight cars on order	
August 1, 1954	12,889
August 1, 1953	47,423

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE.

Departments

Benchmarks & Yardsticks	64
Competitive Transport	9
Current Publications	82
Education	17
Equipment & Supplies	72
Figures of the Week	14
Forum	55
Freight Operating Statistics	34
Labor & Wages	12
Law & Regulation	11
New Facilities	72
Operations	9
Organizations	14
People in the News	14
Public Relations	17
Railway Officers	72
Rates & Fares	17
Revenues & Expenses	76
Securities	15
Supply Trade	72
Traffic	17
What's New in Products	49

Week at a Glance CONTINUED

Pacific; fuel costs per gtm are now no greater than for diesels. 62

Cost-cutting mergers were advocated by Katy President Fraser at the AAR Treasury Division meeting, where *Railway Age's* W. H. Schmidt, Jr., called for new pricing and government policies. 63

The Crandic goes diesel on its 50th anniversary with complete change in motive power—and in communications. 69

BRIEFS

First woman employee of a railroad to win a scholarship award from the Federation for Railway Progress is Miss Elaine J. Borchardt, of the New York Central's Toledo stores department. Miss Borchardt, presently attending the University of Toledo at night, will study labor and personnel management at Northwestern University. Other 1954 winners of the annual scholarship awards are Charles F. Brandenburg, C&O assistant engineer, and Thurman M. Sanders, Santa Fe engineman.

Steel production continues at a disappointingly slow pace. Despite the failure of predictions of a summer upturn to come true, some optimism prevails in the industry about early improvement in the activity of this important source of railroad tonnage.

To streamline collection of freight bills, a Buffalo bank has made a proposal acceptable to the ICC's Division 2. Bills deposited by a carrier would be credited to its bank account, and charged against account of the shipper or receiver, whoever is liable. The carrier benefits by elimination of accounts receivable, and reduction of paperwork and postage. Shipper and receiver avoid vouchering, check writing and necessity of watching statutory deadlines for payment. Only proviso laid down by the ICC was that funds be credited and available to carriers within credit periods specified in regulations.

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In 1953, the I. C. C. estimates indicate that motorists drove close to 500 billion miles between cities! Many of them drove hazardous, tiring miles, *only because they needed a car at their destinations.* By offering these motorists a fine, clean, new car at their destinations anywhere, the Hertz Rail-Auto Plan switches many highway miles to the railroads. And Hertz can prove it! *Last year alone, people who rented Hertz cars at their destinations actually traveled more than 136,000,000 miles on the railroads!*

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3. DISPLAY this small attractively printed sign on the grill of your ticket agents' windows. "*Reserve your Hertz Rent-A-Car from your ticket agent.*" At no charge to you, Hertz provides these signs and passenger folders describing the Hertz Rail-Auto Plan.

4. MENTION the plan in your own advertising as an added inducement for persons to travel by rail. Use displays in your ticket offices. Advertise the plan in your timetables . . . on your billboards . . . on highway over-passes. This way, you will be taking advantage of the $1,000,000 Hertz spends every year in leading national magazines to advertise the Rail-Auto Plan.

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For more information about the Hertz Rail-Auto Plan, and for reservation forms or other display material . . . write, wire or phone the address below.

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Week at a Glance CONTINUED

Ohio may be joined by Pennsylvania and New Jersey in its request to the ICC to ban Riss & Co. trucks from its roads (*Railway Age*, August 2, page 28). The two states, warning that the ICC's decision may have national consequences, have asked for permission to enter the case.

In next week's issue—A detailed description of the Canadian Pacific's new luxury passenger cars.

A new truck ferry service between New London Conn., and Orient, Long Island, N.Y., is proposed by Remsen Lines, Inc., which would use a reconditioned World War II LCT vessel in three or four scheduled daily roundtrips to serve truckers hauling mainly agricultural products.

Rail Travel Credit Agency, composed of 17 western roads, issues about 100 new credit cards and 15 new travel order books each month. The monthly volume of this credit business has recently been about $125,000, and the loss ratio has been approximately 1/20th of one per cent. Effective accounts and credit cards outstanding total over 27,000 and 100,000, respectively.

Coming soon—A full report on North America's newest railroad, the 356-mile Quebec, North Shore & Labrador.

The 47-mile non-common-carrier railroad being built by the Reserve Mining Company to connect its new taconite plant at Babbitt, Minn., with a new lake shipping port at Silver Bay, is nearing completion. Another 73-mile line, to connect Aurora, Minn., with Lake Superior at or near Two Harbors, as part of a $300-million taconite development, is also projected by the Erie Mining Company, subsidiary of Bethlehem, Youngstown and other steel companies.

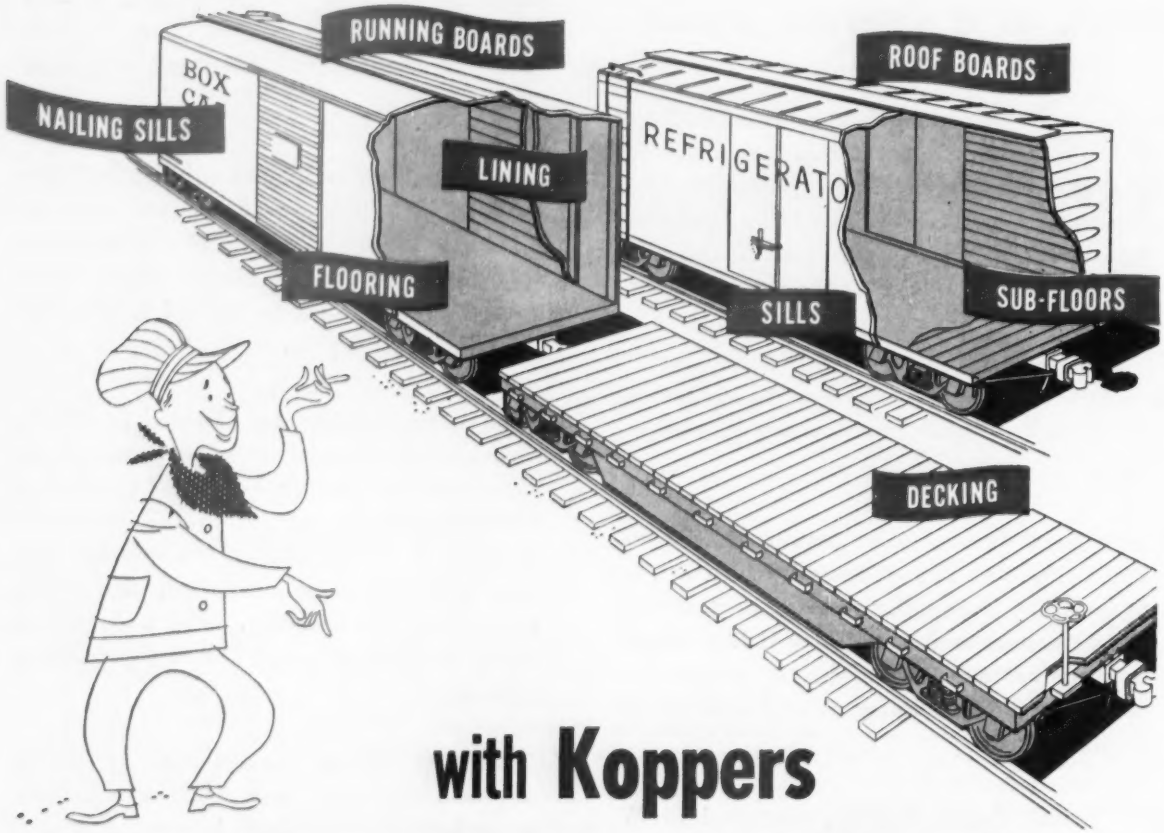
Intercity truckers' tonnage continued its downward trend in the second quarter of 1954. American Trucking Association reported it is only the second time in 10 years that second-quarter freight tonnage showed a decrease from the previous year.

The Tennessee Central has decided to discontinue its remaining passenger service—a daily round trip between Nashville and Harriman, 165 miles. In its petition to the Tennessee Railroad & Public Utilities Commission, the road said patronage was small and losses exceed $55,000 annually. Mail and express would be handled by truck over a paralleling highway.

Although its officers have made no public comment thus far, the Milwaukee is making a careful study of potential piggyback routes within the territory it serves.

"About $3 billion of finished freight moves by highway at present and this may double in five years. Railways with piggyback should be able to recover about one-third of this which, by 1960, would mean $2 billion in gross income per annum. However, you have got to beat the trucks in cost and time or you have no place in the transportation picture. The only answer lies in special 50-car trains carrying 100 trailers, stopping not less often than every 300 miles and permitting delivery and acceptance of trucks without the need of yard switching. Anything less is doomed to failure."—*Dr. L. K Sillcox, president, American Society of Mechanical Engineers, and honorary vice-chairman, New York Air Brake Company at ASME Railroad Division luncheon, Milwaukee, September 10.*

Look where you can save money



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RRs Protest More Air Mail Tests

Extension of first-class-mail-by-air experiment hit as "unfair" in petition of 69 railroads to CAB

Asserting that extension of "first-class mail by air" tests through 1955 would cost the nation's railroads $1,000,000, the 69 chief mail-handling roads have demanded a "full hearing" before the Civil Aeronautics Board.

The railroads assailed the program on legal as well as competitive grounds and argued that continuation would be "grossly unfair." Attorney for the petitioning railroads is Gregory S. Prince, general solicitor, Association of American Railroads.

Demand for the hearing followed application by United Air Lines to the CAB for extension of the experiment through December 31, 1955. United's authority to fly first-class mail expires this September 30. Three other airlines, American, Trans World and Capital, also are engaged in the trials initiated by Postmaster General Summerfield between New York and Chicago and between Washington, D.C., and Chicago. The mail was lost by the New York Central, Pennsylvania and Baltimore & Ohio.

Mail diversion to airplanes cost them $825,000 in annual revenues, the railroads computed in a petition to the CAB for the right to intervene in opposition to United's application. If the four airlines continued the operation for the next 15 months, the petition said, the loss would be more than a million dollars.

Furthermore, petitioners stated, their revenues from the type of mail business being lost—estimated at $95 million in 1953—are a vital factor in the finances of passenger operations which lost $705 million last year. Additionally, they mentioned, the road's mail-handling facilities, valued at $950 million in 1948, must be considered. Because of the temporary nature of the experiment, they held, the roads are "unable to minimize" revenue losses by retirement of unneeded equipment and can not go ahead with planned improvements.

Legal issues raised by the roads hinged on two key points: That the prescribed six-cent rate for air mail is not being charged and that the "space available basis" of the airlines' contracts violates the regulation that any mail carrier "shall transport mail whenever required by the Postmaster General."

The roads said "the time has come" to test the accuracy of a report made to the Senate Appropriations Committee by Mr. Summerfield claiming the air operation cost the Post Office less than it would have paid for shipping the same mail by rail. The petition points out that payments to the air lines were based, not on their costs, but on what it would have cost the Post Office to ship by rail.

Time for proof—Also, the railroads said, a year's experience with the program should enable the board to establish rates for the substituted air service whereas the initial rates were set without benefit of experience. "There would seem to be no reason" petitioners argued, "why the board should not at this time demand the sort of proof it normally requires before approving a rate of compensation."

The roads also suggested that the CAB consider whether the "basic distinction" between regular six-cent air mail and first-class (three-cent) mail by air has been maintained thus far.

$1,000 CHECKS being presented to the three 1954 winners of Federation for Railway Progress scholarships. Left to right are Miss Elaine J. Borchardt of the New York Central; Charles F. Brandenburg, Jr., of the Chesapeake & Ohio; Thomas J. Deegan, Jr., chairman of the federation, who made the presentations; and Thurman M. Sanders of the Santa Fe.

Operations

Cooperation Can Solve Dirty Car Problem

Closer cooperation between industries and railroads to report cars released dirty, and to expose offenders, will help greatly to solve the dirty car problem, according to seven out of ten vice-presidents of operation and traffic of various leading railroads who responded to a poll conducted by *Railway Freight Traffic*, companion publication of *Railway Age*.

Interest in the problem by railroad officers responding to the poll was indicated by the extraordinary return of ballots—116 ballots were sent and 94 replies were received.

A year ago, over half of all industrial traffic managers polled voted for the same remedy to help solve the dirty-car problem.

The idea of establishing punitive measures by the Interstate Commerce Commission, through its authority over the car supply, met with very little support by the railroad executives.

Another suggested remedy—establishing a flat charge to be levied by railroads upon receivers of freight who released cars adjudged "dirty"—also received light support.

A few respondents, not thinking any of the suggested remedies were complete answers to the problem, offered solutions which were combinations of all three.

GM Research Tackles Hot Boxes from Two Angles

General Motors Research Laboratories in cooperation with GM's Allison division have investigated the hot box problem from two angles, lubrication and design. Applying principles proved successful in automotive and diesel engine studies, the researchers have shown how a different oil additive improves bearing lubrication and they have designed a new aluminum bearing. The new bearing weighs eight pounds, or approximately one-third as much as a conventional bronze bearing.

The project began two years ago

when A. F. Underwood, head of the laboratory's Mechanical Development Department was asked by a railroad president to find out what help GM's bearings experts could offer toward alleviating this major operating problem. His staff first tested samples of bearing oils, disclosing that: (1) the oil the railroads were using would become thin under ordinary operating conditions, resulting in metal-to-metal contact between bearing and axle; and (2) the "oiliness additive" had little effect on cutting down hot boxes in service. They suggested a different additive compatible with the metals used in a railroad journal bearing.

Concurrent with the additive investigation, work was begun to examine the possibility of substituting an aluminum bearing for the standard bronze model. The data gathered from the GM development work has been submitted to the AAR, which is currently running a parallel investigation on other aluminum alloy bearings.

Waybill Returns Make Good Sample

That is indicated by test made by ICC bureau—committee of practitioners sees "basic need" for information supplied by waybill studies

The one-per-cent waybill sample being collected by the Interstate Commerce Commission has been showing 97.8% as many waybill terminations as are shown by 1% of total waybill terminations as reported by railroads to the commission.

That was the situation in 1953, according to comparative figures presented by the commission's Bureau of Transport Economics and Statistics in its "Monthly Comment." The bureau made the comparison because a recent report appraising the waybill studies said there was "need . . . for demonstrations of the general representativeness of the material based on comparisons with known controls."

The appraisal report was made to the executive committee of the Association of Interstate Commerce Commission Practitioners by the association's committee on waybill statistics. Ford K. Edwards, director of the National Coal Association's Department of Coal Economics and former director of the commission's Bureau of Accounts and Cost Finding, was chairman of the latter committee.

The general conclusion of its report was that "there is a basic need for the information supplied by the waybill studies." A dissent came from one member of the committee—J. M. Souby, retired general solicitor of the Association of American Railroads, who said "the information actually supplied by the studies is so unreliable as to meet no need whatsoever."

Recommendations and conclusions of the majority, in addition to that mentioned above, were these:

A. While there are certain inadequacies in the present waybill sampling program, the sampling process, subject to checks currently made, and in the light of the cost, meets in a practical way the basic need for such information.

B. There has existed a need for better explanation and publicizing of the waybill statistics, particularly with relation to their intent and purpose, utilization, and the controls exercised in testing the sample for representativeness.

C. The commission should give serious consideration to extending the present waybill studies to include truck movements of traffic by Class I common and contract motor carriers subject to the Interstate Commerce Act as a means of presenting a more complete national picture of traffic flow and competitive rate levels.

The report noted that one of the committee members, Roland Rice, had abstained from expressing an opinion on the latter recommendation. Mr. Rice is a Washington attorney who was formerly, in turn, general counsel of American Trucking Associations and assistant general counsel of the AAR.

Mr. Souby's dissent recorded his disagreement only with the committee's general conclusion that there was need for the waybill data, and with the first of the foregoing, i.e., the finding that the present program meet the need in a practical way. He said in part:

"Such a large percentage of rail traffic is seasonal or otherwise irregular in movement that, in my judgment, data based on a daily one per cent sample is utterly unreliable for any purpose. The fact that it is compiled and released by the commission . . . gives it a delusive impression of accuracy and invites its indiscriminate use and acceptance for whatever purpose it may happen to serve at the time. . . .

"My own conclusion, therefore, is that these waybill studies impose a needless and useless expense on the commission and the carriers and so should be discontinued."

Accompanying the committee's report was a digest of replies to a questionaire sent to 246 interested parties. Replies were received from 110, and 67 of these were interpreted as "favorable" toward the waybill studies, while 36 were "critical" and seven were in the "no comment" class. Six rail carriers were listed as "favorable" and 9 "critical." Ten "shippers" were "favorable" and 11 were "critical", while four reporting "shipper associations" lined up two-to-two. Most of the "favorable" replies came from federal agencies, state and municipal agencies, practitioners and transportation consultants, and colleges.

The "Comment" article made its comparison of the sample with one per cent of the reported terminations on the basis of geographical groupings of railroads by regions used in the commission's statistical tabulations. Ratios of the number of waybills collected in the sampling program to one per cent of the number of waybill terminations reported to the commission ranged in 1953 from 99.7% in the Pocahontas region to 96.7% in the Central Eastern region.

The tabulation also showed like ratios for 1950, and that showing pointed up how the sample reports have been improving. The countrywide ratio for 1950 was 96.6, and the regional figures ranged from New England's 99.8 to Northwestern's 93.6.

The deficiencies in coverage "are due primarily to reporting failures rather than to sampling variation and to this extent can be still further reduced," the bureau said. It also said it expected to present similar comparisons from time to time, using bases other than the regional groupings.

SAL Sues to Vacate ICC Order for ACL Interchange

The Seaboard Air Line has filed suit in Norfolk, Va., asking suspension of a recent Interstate Commerce Commission order that the SAL and Atlantic

AIRLINES' "PAY LATER" PLANS HIGHLY SUCCESSFUL

Installment buying of airline transportation, begun last May by Pan American World Airways *(Railway Age*, May 24, page 4), has been "highly successful" according to an airlines' spokesman. As a result, Air Traffic Conference, the airlines' traffic organization, is expected to work out a financing plan for the entire industry at its next meeting, in November.

Pan American's "pay later" sales for the first three months of its operation, mid-May to mid-August, totaled $1.5 million and PAA officials expect a steady increase until next summer, when a big jump in "pay later" vacation travel is expected. Trans World Airlines, which inaugurated the same type plan August 1, reported $250,000 sales in the first 20 days of its operation.

Other airlines are reported to be ready to offer plans of their own; some have already instituted such programs on limited scales. Foreign airlines, too, are offering installment plans which, some observers state, are expected to affect airline transportation much the same as installment buying influenced sales in the automobile and home appliance fields.

Coast Line provide for interchange of freight traffic at Jacksonville, Fla. Traffic involved, now interchanged at Thalmann, Ga., is that moving to or from Florida points south of Jacksonville to or from Atlanta or Birmingham, or points beyond.

SAL, asking that the suit be heard by a special three-judge federal court, claimed the ICC order "without legal justification deprives the Seaboard of its long haul over its single-line routes through Montgomery, Ala., Vidalia, Ga., and Columbus, Ga., on traffic to and from points south of Jacksonville and the Atlanta and Birmingham gateways."

Law & Regulation

Cabinet Group's Program Hinted

President's transport committee may consider passenger deficits, taxes, Royster indicates

The first public clue as to what specific areas may be explored by the President's Cabinet Committee on Transport Policy came September 14 in a talk to the New England Shippers Advisory Board by a Department of Commerce official.

Concluding a speech in which the railroads' role in the national transport picture was highlighted, Paul F. Royster, assistant to the undersecretary of commerce for transportation, indicated that the committee's study might be in four categories. His address was at the 57th meeting of the NESAB at Poland Spring, Maine.

Mr. Royster, in whose department much of the basic work of the committee is being done, stated that "we are not able at this point to say what subjects this committee will cover." However, he suggested that four "pertinent subjects" might be "the rail passenger deficit, excise taxes on transportation, the fourth section provisions of the Interstate Commerce Act, and revising the policy declaration of the Transportation Act of 1940."

President Eisenhower set up the committee this Summer with Secretary of Commerce Weeks as chairman (*Railway Age*, July 19, page 10) and a working group was named September 2 (*Railway Age*, September 6, page 55). Much of the preliminary work, Mr. Royster reported, is being done in the office of Undersecretary of Commerce for Transportation Robert B. Murray, Jr.

"We in the Department of Commerce are practically optimistic of the results the study will bring," he declared.

Other Highlights of Mr. Royster's talk included statements that:

"Government policies and programs have tended to impair railroads' ability to compete for available traffic."

"There is an absolute necessity for a financially sound transportation system, privately owned and operated, subject only to the degree of regulation essential to the maintenance of fair competition."

There has been no change in a policy enunciated by Mr. Murray that the government must "do what it can to assure a continuing program of capital outlay to maintain railroad plant and equipment at required levels."

"Railroads ought to abandon branch lines if their operation is unprofitable" and alternate services are available.

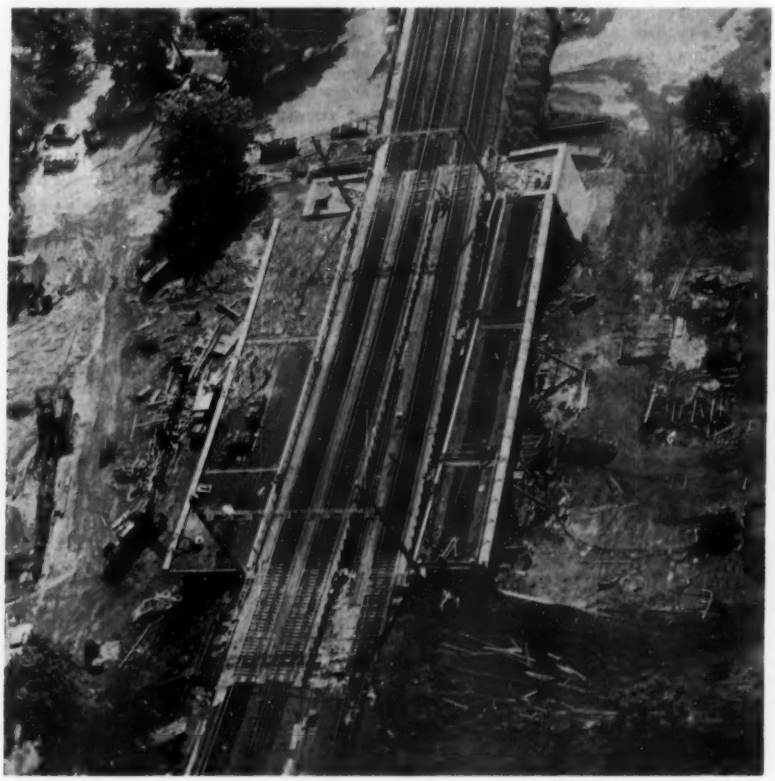
Creeping Socialism—Mr. Royster warned that any move to "do away with our free competitive system" will first be detected in the transportation field. "And if it begins there," he declared, "look out, for it will not end there." Transportation in America, he went on, "functions within the framework of a free competitive system" which is unique in the world.

Railroads the Mainstay—Mr. Royster termed the railroads still "the mainstay of our transportation system" despite the growth of other modes but cautioned that the "problems faced by the railroads in 1954 are many."

Recalling the financial troubles of the 'thirties, he said one still hears that the roads "suffer from discriminatory regulatory practices . . . are bled by excessive taxation; that their earnings are inadequate" and that they are deep in debt and unable to expand.

Without voicing his opinion of those statements, he said "I do believe the railroads will need to do a real job in meeting the minimal needs of further economic growth and of national defense. And they will need some hearty cooperation."

Railroads Thwarted—He added that "historically, the Interstate Commerce Commission has failed to approve a substantial part of the railroads' requested (rate) increases." Without "decrying" this, Mr. Royster



NEWARK EVENING NEWS PHOTO

"BUILT FOR OUR COMPETITOR," is how one Lackawanna officer described this new bridge being built under the DL&W main line at East Orange, N. J., to accommodate the new Garden State Parkway. Temporary spans were first installed to support the tracks while permanent steel and concrete spans were constructed on falsework alongside. The south (single-track) span at the right was rolled into position September 11—placement of the double-track span (left) is planned for next weekend.

concluded "the results have been in large measure unsatisfactory to the railroads."

As to subsidies to the railroads' competitors, he noted that the government "spends large sums for . . . airways and waterways, but imposes no charge for their use." And, he observed, some feel that truckers do not pay proportionately for their use of public roads. He recommended that future transport planning be "on the basis of consistent economic standards with careful regard for overall transportation needs."

He also suggested that the ICC have "final word" in disputes with state agencies over proposed abandonments of unprofitable passenger services.

ICC Reopens Unloading Case Sent Back by Court

The Interstate Commerce Commission has reopened the case wherein it approved railroad charges for unloading carload shipments of fruits and vegetables at New York and Philadelphia.

The reopening was in response to a ruling of the United States Supreme Court which remanded the case because the ICC "has not sufficiently spelled out the legal basis of its decision." (*Railway Age*, June 28, page 7.)

ICC Bureau, Examiner Split Over Trucker of Explosives

The Bureau of Inquiry and Compliance of the Interstate Commerce Commission has filed exceptions to an examiner's recommendation that the commission discontinue its investigation of the operations of Watson Brothers Transportation Company. The inquiry was instituted by the commission last December after Watson, as the examiner put it, "was involved in three spectactular and notorious accidents wherein cargoes of munitions . . . were ignited and exploded."

The examiner is Otto A. Hanson, and his recommendation was made in a proposed report which also recommended that Watson be granted authority to operate over alternate routes between St. Louis and Kansas City, Mo., and Albuquerque, N. M. The Bureau of Inquiry and Compliance intervened in the case at the direction of the commission to present evidence bearing on Watson's fitness to perform the proposed service.

The bureau's exceptions listed eight separate points of disagreement, especially opposing the statement of Mr. Hanson that there was no "wilfullness" indicated in the company's many violations of safety and record-keeping rules. The record in the case, the bureau stated, "displays an almost total lack of heed to the warnings and admonitions concerning violations" given by the commission in 1948. It said there was "ample evidence" of "wilfullness" in the case.

Labor & Wages

Gurley Hits Union Shop

"It's an intolerable deprivation of liberty," says Santa Fe president—Unions seek not to serve members but to dominate them, he charges

"Whatever may be the source and scope of federal power over our economy, we do not believe that enforced membership in a private organization as the price of a livelihood can be reconciled with the basic rights of an American citizen. There is, we believe, an intolerable deprivation of liberty when a man is forced to join a union or any other private organization, pay its initiation fees, dues and assessments, and become subject to its discipline and control as the condition of earning a living."

Thus said Fred G. Gurley, Santa Fe president, in Chicago September 9 at a symposium sponsored by the Chicago Board of Trade. Mr. Gurley said he was convinced "the greatest service we can render for the benefit of ourselves, our families, our children and for the future generations is to do everything we possibly can to insure perpetuation of our free enterprise system." He cited, as threats to free enterprise: Government policies on farm surpluses and on the subsidy of motor trucking; revision of railroad rate structure; the so-called war-materials reparations case; and congressional action relating to the union shop.

"It seems to me," he said, "that a common thread of thought runs through relinquishment of freedoms by farmers under the subsidy program and relinquishment of freedoms unions are seeking to enforce, under government support, with respect to the railroads' non-operating employees." The Santa Fe's current legal fight against the union shop "involves no rejection of unions or unionism," he continued, "but there is an unbridgeable gap between recognition of unions, on one hand, and compulsory union membership as the price of a livelihood, on the other.

"Advocates of the union shop seek to justify it as essential to union security, but no one can be seriously misled by such a claim. It is perfectly clear from the record that the unions want a governmentally sponsored union shop because of the control it gives the union over its members. I cannot see the justice, or, in fact, the wisdom of accepting compulsory union membership as the price of earning a living, not so the union may serve its members but so it may dominate them. None of us would tolerate for one moment the general proposition that in a free society a private organization should have the right to dictate, against a man's will, when and where and whether he might work to earn a living."

Traffic siphon.—Discussing government regulation of transportation, Mr. Gurley told how exempt truckers are siphoning off grain traffic from west Texas to the Pacific Coast. "With neither ceiling above nor floor below their rates, and with no requirement of tariff publication or even disclosure of their rates, these unregulated operators can and do compete *ad lib* with railroads and with each other, charging what the circumstances call for at the time and place. There is neither regularity nor dependability in the service, because these operators do not bear the common-carrier burden of serving indiscriminately year in and year out, in fair weather and in foul, in good times and in bad. They pick and choose the traffic which they handle according to their own economic incentives, and not in relation to their patrons' needs.

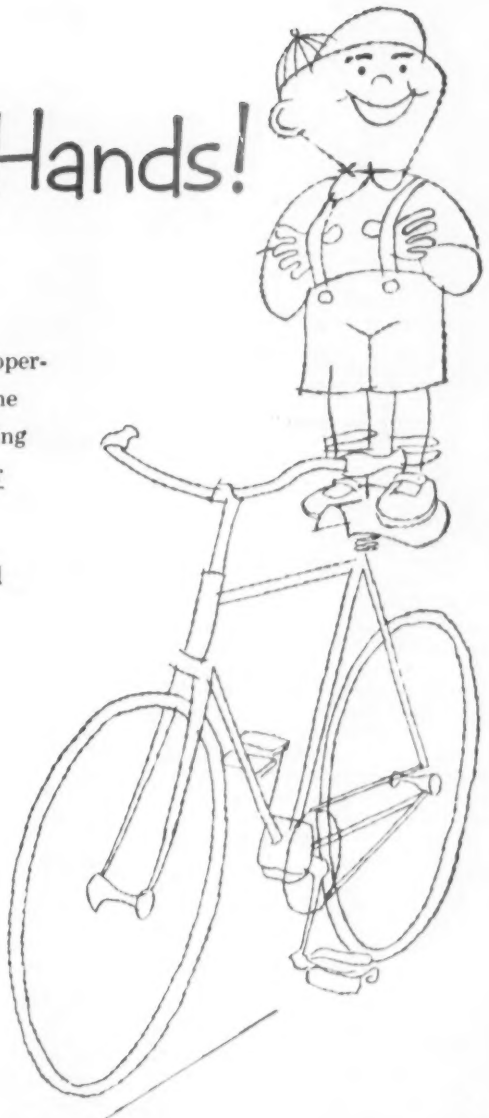
"It does not take an astute business man to see that orderly commodity marketing is extremely difficult in such a situation, nor do you need to be a profound student of transportation economies to see that railroads are at an almost insuperable disadvantage in meeting this type of competition.

"It is a great mistake to think of the agricultural exemption merely as a concession that allows the farmer to haul his produce to market free of regulatory red tape. It is, in fact, a powerful weapon for destructive competition in the hands of for-hire operators."

Ponderous pricing.—Commenting on the "time-lag" problem of keeping railroad freight rates abreast of inflationary increases in operating costs, he observed that "Regulatory procedures devised to operate during periods of moderate economic changes are not adapted to the needs of industry when economic changes are severe and of continuing duration". He termed failure of the 83rd Congress to act upon the railroads' top congressional proposal, the time-lag bill, "surprising and disappointing." He warned that "those who influence legislation and regulation should recognize the fact that regulatory procedures must not damage regulated industries by preventing them from making the same adjustments made expeditiously by non-regulated carriers."

Finality of rates.—"When a grain buyer nods or winks or gestures at the critical instance, a deal is closed, a bargain made. It may turn out to be provident or improvident, but it is final." By contrast, he cited the Interstate Commerce Commission's authority to review all railroad rates and to make retroactive adjustments reaching

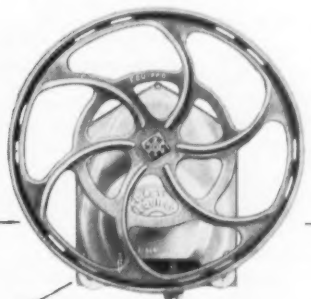
Look Ma--No Hands!



This may be alright as a kid stunt . . . but the operation of a hand brake is a serious matter. The trainman needs both hands . . . one for operating the brake and the other for holding onto the car for his own safety.

The EQUIPCO A.A.R. Certified Non-Spin Wheel Hand Brake never requires more than one hand to operate it . . . always leaving the other hand free for a safe hold on the grab-iron or handhold.

There are no levers or gadgets to confuse you on the EQUIPCO Hand Brake . . . nothing to operate but the brake wheel.



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back for years. "One of the most serious cases with which railroads ever were confronted is the pending war-materials reparations case which involves sums between two and three billion dollars, according to statements issued by the Department of Justice," he continued. "Some shipments where the rate is a matter of current litigation were moved 12 or 13 years ago.

"We think the suit is entirely unfounded and decidedly unfriendly. While certain reparations are perhaps the unavoidable burden of a public service institution such as railroads, this case, in my judgment, is entirely wrong and goes way beyond anything suggested by reasonable relationships between the government, in its capacity as a shipper, and an industry regulated by that same **government."**

Organizations

A. E. Stoddard, president of the Union Pacific, will speak at a banquet to be held October 5 during the convention of the **American Council of Railroad Women** at Hotel Utah, Salt Lake City, October 4-6. Other speakers at the convention will be Miles P. Romney, manager, Utah Mining Association, who will talk on "Interdependence of Industry and Railroads," and Richard Evans, author and commentator. As an aid in promoting community service, the program will feature a co-operative project with Salt Lake City high schools, during which 18 members of the ACRW will attend career conferences at three schools to discuss opportunities for women in railroading.

The program of the 47th Annual Conference on Taxation, sponsored by the **National Tax Association** at Mount Washington Hotel, Bretton Woods, N.H., will include a round table discussion of railroad tax problems in the morning of September 28. It will be presided over by Wilbur Bush, general tax agent, Burlington Route. Speakers will include Robert Allphin, commissioner, Department of Revenue of Kentucky; Sidney L. Miller, professor and head of the Department of Transportation, University of Pittsburgh's School of Business Administration; A. R. Seder, vice-president in charge of finance, accounting, taxation and valuation, AAR; and R. J. Littlefield, general tax agent of the PRR.

J. A. Holmes, construction engineer of the Southern Pacific, will speak on "The Signal System in Jennings Yard at Roseville," at a meeting of the **Pacific Railway Club** in the American Legion Hall, Roseville, Cal., at 6:30 p.m., September 23.

The **Central Railway Club's** annual dinner will be at the Hotel Statler, Buffalo, October 21.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended September 11 totaled 601,525 cars, the Association of American Railroads announced on September 16. This was a decrease of 86,967 cars, or 12.6 per cent, compared with the previous week; a decrease of 109,029 cars, or 15.3 per cent, compared with the corresponding week last year; and a decrease of 279,766 cars, or 31.7 per cent, compared with the equivalent 1952 week.

Loadings of revenue freight for the week ended September 4 totaled 688,492 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follow:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, September 4

District	1954	1953	1952
Eastern	108,194	131,803	122,371
Allegheny	123,494	158,022	151,239
Pocahontas	48,519	59,501	54,438
Southern	116,609	123,246	111,374
Northwestern	115,991	142,748	135,128
Central Western	118,623	125,733	115,352
Southwestern	57,062	58,027	56,980
Total Western Districts	291,676	326,508	307,460
Total All Roads	688,492	799,080	746,882
Commodities:			
Grain and grain products	52,341	48,731	39,804
Livestock	9,317	8,039	10,413
Coal	112,786	136,903	136,769
Coke	6,819	12,258	13,548
Forest products	38,840	44,716	40,115
Ore	60,185	94,520	94,373
Merchandise l.c.l.	64,741	70,395	63,070
Miscellaneous	343,463	383,518	348,790
September 4	688,492	799,080	746,882
August 28	676,616	818,461	727,360
August 21	678,624	817,446	834,229
August 14	685,277	807,622	805,756
August 7	667,592	785,349	781,648
Cumulative total 36 weeks	23,008,204	26,712,284	25,400,944

In Canada.—Carloadings for the ten-day period ended August 31 totaled 101,278 cars, compared with 74,807 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
August 31, 1954	101,278	34,422
August 31, 1953	107,517	45,937
Cumulative Totals:		
August 31, 1954	2,393,662	954,509
August 31, 1953	2,647,794	1,102,672

People in the News

Eksergian to Receive Henderson Medal

C. Levon Eksergian, executive engineer of the Budd Company, will be awarded the George R. Henderson Medal by the Franklin Institute of Pennsylvania for his outstanding accomplishments in the field of railway engineering, at the institute's Medal Day ceremonies, October 20.

The citation which will accompany the medal will say that it is presented "in recognition of his invention and subsequent intensive development and application of the disk brake as applied to both self-propelled and high-speed passenger cars . . ."

In 1937 Mr. Eksergian, then chief engineer of the former Budd Wheel Company, was charged with the job of developing a braking system for railroad passenger cars—one that would overcome deficiencies in the clasp braking system. The proportions of the disk brake were based on a theory of brake action which he formulated in recognition of the differences between average heating and cooling with specific duty cycles and the heating problem at maximum power absorption, which requires special consideration in the proportions of a brake for stopping at high speeds. Mr. Eksergian directed a systematic research program for obtaining quantitative data on this and other physical limitations in development of a successful brake.

ODM Names Dennis Transport Coordinator

John P. Dennis, manager of the Texas Company's traffic division and formerly assistant to the vice-president of the Northern Pacific, has joined the staff of the Office of Defense Mobilization as coordinator of defense transportation. As such, he'll be responsible for reviewing, developing and coordinating policies to prepare the transport industry for a quick transition to wartime operation.

McGinnis Appoints Stevens Consultant on GCT Matters

Roger Stevens, real estate authority, financier and, until recently, owner of controlling interest in the Empire State Building, has been appointed consultant to Patrick B. McGinnis, president of the New Haven, on matters pertaining to development of Grand Central Terminal, New York.

Mr. Stevens will represent the New Haven in current efforts by that road and the New York Central to reduce the terminal's $24 million annual deficit. An expert on city development matters, Mr. Stevens was active in the Back Bay (Boston) development and a similar project now under way at Seattle.

In announcing Mr. Stevens' appointment, Mr. McGinnis added that he is in full sympathy with NYC Chairman Robert R. Young's plan for relieving the Terminal's operating deficit (*Railway Age*, September 13, page 9). "Our commuters and through passengers from and to New England points," said Mr. McGinnis, "cannot continue to support this edifice on which they pay taxes of more than five million dollars every year. They are paying

for facilities in a 'palace' while our competitors have the pleasure of using publicly owned, tax-free terminals such as LaGuardia and Idlewild airports, and the Port of New York Authority's magnificient bus terminal."

Hoppe a Fellow of ASME

A. G. Hoppe, mechanical engineer of the Milwaukee, has been made a Fellow of the American Society of Mechanical Engineers. Mr. Hoppe is a member of the Executive Committee of the Railroad Division of the society, in which he has been active for some time.

ASME Awards Melville Medal to E. Q. Sylvester

E. Q. Sylvester, executive vice-president of the Griffin Wheel Company, has been named to receive the Melville Prize Medal.

The award, which is administered by the board on honors of the American Society of Mechanical Engineers, is conferred annually for the best original paper on a mechanical engineering subject presented to the society for discussion and publication. Mr. Sylvester's paper, "Pressure Pouring Steel Car Wheels in Permanent Molds," was presented before a joint session of the ASME Railroad Division, the ASME Research Committee on Metal Processing, and the American Society for Testing Materials at ASME's 1953 annual meeting in New York.

Mr. Sylvester, a graduate of Massachusetts Institute of Technology, has been with the Griffin Wheel Company since 1940. In addition to writing a chapter on "Fatigue of Metals" in the book, "Engineering Opportunities," he holds a number of patents on methods of manufacturing railway car wheels.

Perlman Elected To NYC Board

Alfred E. Perlman, president of the New York Central, has been elected a member of the road's board of directors, it was announced last week by Robert R. Young, NYC chairman. Mr. Perlman succeeds Andrew Van Pelt, who resigned. Mr. Van Pelt is a director of Alleghany Corporation, of which Mr. Young also is chairman.

ASME Honors Oatley

Henry Bigelow Oatley, retired mechanical and consulting engineer, has been elected to honorary membership in the American Society of Mechanical Engineers. The rank, awarded for "acknowledged eminence in the engineering field," is the highest honor conferred by ASME. It was bestowed on Mr. Oatley for his achievements "in the field of steam generation and use in locomotives and for his services to the engineering profession and to the general public." Mr. Oatley, from 1910 until his retirement in 1950, was with the Superheater Company, where he became chief engineer, vice-president and consulting engineer.

For 23 years, Mr. Oatley worked on the Boiler Code Committee of ASME as a member, vice-chairman and chairman. As a member of various committees of the American Society for Testing Materials, he has contributed to development of the society's specifications for steel tubes, pipes and plates. Since 1943 he has been chairman of the ASTM Committee A1 on Steel. He has been a member of the ASME Committee on Power Test Codes since 1935.

A. E. PERLMAN, president of the New York Central, looking at an NYC inspection car equipped with auxiliary wheels to permit travel on highway or rails. Mr. Perlman inspected the car at Weehawken, N. J., before a recent tour of the road's River division.

Securities

Security Price Averages

	Sept. 14	Prev. Week	Last Year
Average price of 20 representative railway stocks	70.54	68.89	57.43
Average price of 20 representative railway bonds	96.25	96.78	89.14

Authorization

CHICAGO GREAT WESTERN.—To issue $5,000,000 of collateral trust bonds to pay the principal and accrued interest on $3,250,000 of promissory notes and to provide working capital. They will be secured by $8,750,000 first mortgage, 4% bonds, series A, Division 4 approved sale of the bonds for 98.86 based on an interest rate of 3⅞% (the bid of Glore, Forgan & Co. and four associates) which will make the annual cost of the securities to the road approximately 3.98%. Dated August 1, the bonds will mature August 1, 1969.

Applications

LOUISVILLE & NASHVILLE.—To sell $30,350,000 of 50-year 3¾% bonds, series I, under first and refunding mortgage, to redeem a like amount of 4% bonds issued under the Atlanta, Knoxville & Cincinnati Division Mortgage and maturing May 1, 1955. The new issue would be dated October 1, 1954 and would be payable semi-annually, maturing April 1, 2003.

NORTHERN PACIFIC.—To issue and sell $52,000,000 of collateral trust bonds to redeem bond issues due in 1975 and 2047. The new issue would redeem series C 5% refunding mortgage bonds, series D 5% improvement mortgage bonds, both due in 2047, and outstanding 4½% collateral trust bonds due in 1975. The road would repledge $78,000,000 of its series E 4% improvement mortgage bonds as collateral and would supply cash from its treasury if needed.

Dividends Declared

BESSEMER & LAKE ERIE.—$1.50 preferred, 75¢, semiannual, payable October 1 to holders of record September 15.

DOVER & ROCKAWAY.—$3, semiannual, payable October 1 to holders of record September 30.

MINNEAPOLIS & ST. LOUIS.—new common, 30¢, initial, payable September 30 to holders of record September 20.

NEW YORK, NEW HAVEN & HARTFORD.—$5 preferred, $1.50, accumulative, payable September 30 to holders of record September 20.

PHILADELPHIA & TRENTON.—$2.50, quarterly, payable October 11 to holders of record October 1.

PIEDMONT & NORTHERN.—$1, quarterly, payable October 20 to holders of record October 5.

PITTSBURGH & LAKE ERIE.—$1.50, quarterly, payable October 15 to holders of record September 24.

PROVIDENCE & WORCESTER.—$2.50, quarterly, payable October 1 to holders of record September 13.

(More News on page 17)

ERIE
Steamer, old Erie 970 began its long successful career in 1903. It carried 6,800 gals. of water and 14 tons of coal, developing 28,650 lbs. of tractive effort.

Then...and now...serviced with Esso Railroad Products

Valuable years of experience in research and development, along with continual testing on the road and in the lab, stand back of the outstanding performance of famous Esso Railroad Products.

Diesel Fuels
ESSO ANDOK Lubricants—versatile greases
ARACAR—journal box oils
ARAPEN—brake cylinder lubricant
ESSO XP Compound—hypoid gear lubricant
DIOL RD—Diesel lube oil
COBLAX—traction motor gear lube
VARSOL—Stoddard Solvent
SOLVESSO—Aromatic solvent
ESSO Weed Killer
ESSO Hot Box Compound
AROX—pneumatic tool lube
CYLESSO—valve oil
ESSO Journal box compound
Asphalt
Cutting Oils
Rail Joint Compounds
Maintenance of Way Products
Signal Department Products
RUST-BAN—corrosion preventive

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ESSO STANDARD OIL COMPANY — Boston, Mass. — Pelham, N. Y. — Elizabeth, N. J. — Philadelphia, Pa. — Baltimore, Md. — Richmond, Va. — Charlotte, N. C. — Columbia, S. C. — Memphis, Tenn. — New Orleans, La.

Education

MRS Officers Get "On-the-Job" Training

Transportation Corps officers who are planning to make the Military Railway Service their Army career are now getting "on-the-job" training on the railroads.

The idea of the training program is to equip these officers with practical "know-how" to handle mass movements of men and material as well as to direct the operations of hospital and evacuation trains in emergency situations in much the same manner as the Military Railway Service functioned in World War II and later in Japan and Korea.

These new MRS officers will replace those retiring from the military service and the reserve, most of them former railroaders who have completed their tour of duty and are resuming civilian status.

Already 28 of these new officers have completed the normal training tour of 22 weeks of around-the-clock service on various railroads. Others are now going through similar courses; as they "graduate" from the railroad ranks, additional trainees will move up from the Army's Transportation School at Fort Eustis, Va. The Transportation School processes the candidates selected for special railroad training.

Maintenance and servicing of rolling stock, track, signals and communications will be one of the primary responsibilities of these officers. Throughout their indoctrination under varying operating conditions, they work under the supervision of railroad officers in shops and yards, along rights-of-way and then in dispatchers' and trainmasters' offices. They are expected to equip themselves in all phases of terminal and main-line operations to provide logistical support to men in the field.

The program, separate and distinct from that carried on for enlisted personnel in the MRS' shop and operating battalions, was launched less than a year ago. It is under the direction of Col. Lewis W. Anderson, chief of the Railway Transport Division, Office of the Chief of Transportation. Only small classes are being conducted; it is geared especially to meet the army's demands for supervisory personnel in railway operations.

Among railroads cooperating with the Transportation Corps in the training program are the Pennsylvania, New York Central, Reading, Lackawanna, Chesapeake & Ohio, Seaboard Air Line, Atlantic Coast Line and Norfolk & Western.

At the present time, the Military Railway Service has four units in Korea, two at Fort Eustis, Va., and one at Fort Meade, Md. In addition, it has several train crews in Alaska.

IC STARTS BLOOD BANK CO-OP FOR EMPLOYEES

Illinois Central employees may now obtain blood without cost, under a new cooperative blood supply program set up by the road's hospital department. A reserve of blood will be built up by periodic voluntary contributions from employees themselves in accordance with an established schedule. In addition to receiving contributions at company hospitals at Chicago, Paducah, Ky., and New Orleans, arrangements have been made for local and divisional medical officers to receive contributions which are then shipped to the hospital department in special containers.

The system-wide program was inaugurated July 19 following an experimental and limited voluntary donor program conducted over the past year. Dr. Ernest C. Olson, chief surgeon of the road, says the department requires about 2,000 units of blood a year for emergency and routine medical and surgical cases.

Established in 1911, the IC's hospital department has grown into one of the largest industrial hospital systems in the country. In addition to the Chicago, Paducah and New Orleans hospitals, which have a total capacity of more than 400 beds, the department operates three infirmaries and has arrangements with 120 other hospitals to accept employees requiring emergency hospitalization. The department has more than 500 full-time employees and more than 900 part-time consultants, division, district and local surgeons. About 42,000 employees—including retired personnel—contribute to its support.

Rates & Fares

ICC Approves All-Freight Rates, Cal. to Northwest

Reduced all-commodity rates from Los Angeles and San Francisco to the Portland and Seattle areas have been approved by the Interstate Commerce Commission over the protests of competing motor carriers.

The rates, effective since June 6, 1953, were instituted "to meet competition of motor carriers who by contract provide low 'less-than-truckload' rates to forwarders," the commission said. The truckers' claim, the report follows, "of destructive competition, in the absence of proof of an excessive diversion of tonnage . . . is unfounded."

The commission's Division 3 also rejected protests of the Oakland and San Francisco Chambers of Commerce which argued that the rates unlawfully reduced the spread between rates on Bay area-to-Northwest and Los Angeles-to Northwest freight.

Public Relations

Begin Research for History of Great Northern

Preliminary work has started on preparation of a history of the Great Northern. Business History Foundation, Inc., an organization chartered to conduct research and aid in publication of business history, is undertaking the work.

John M. Budd, GN president, termed the history "an objective, documented story of the founding, development and progress of the company and its predecessors." Drs. Ralph W. and Muriel E. Hidy, of the foundation staff, will co-author the work, publication of which is not expected until sometime in 1962.

Traffic

GM&O Acquires Industrial Land in Mobile

Seventy acres of land within the Mobile, Ala., switching district have been purchased by the Gulf, Mobile & Ohio; along with an additional 20 acres which the road has under option, they will be improved and made available to light manufacturing businesses and wholesale warehouse distributors.

Bounded by the company's belt line, its so-called Bay Shore tracks and Three Mile creek, the new land adjoins some 200 acres which the GM&O has already developed for industrial use. Development of the new land, President F. M. Hicks stated, will begin at an early date.

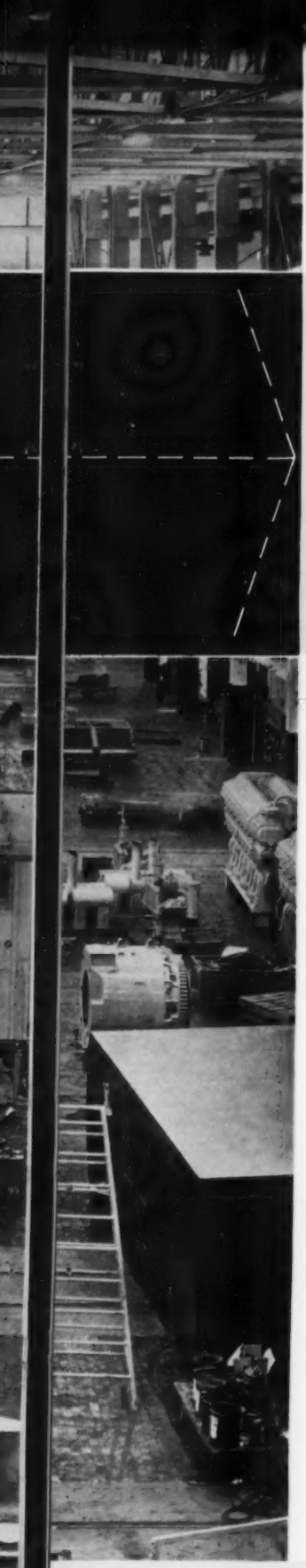
NP Buys Land in Spokane

The Northern Pacific has purchased 73 acres of land about 1½ miles east of the city limits of Spokane, Wash. Located adjacent to the NP's main line, the land will be used for industrial development. The company plans to provide tracks, roads and a water system as soon as industries locate on the tract.

The cost of the land was set at "slightly in excess of $100,000" by J. E. Thames, general manager of industrial properties.

(More News on page 72)

YOUR OLD LOCOMOTIVES CAN BE MODERNIZED



at a cost of about 6¢ a mile

Figure it this way: If you have an older model Diesel locomotive with about 600,000 miles on it, you can have it modernized by Electro-Motive for approximately 6¢ per elapsed mile.

This price includes complete rebuilding of major components such as engine, generators, traction motors and control apparatus. And we do more than simply restore the original mileage. For in rebuilding worn components we incorporate many of the latest advances in design that go into current locomotive manufacture. Thus, every locomotive we rebuild leaves our factory a better unit than it was in the first place—with increased efficiency, higher capacity and longer useful life.

Through this program, F3 units due for 600,000-mile overhaul can be *modernized*—have the original mileage built back in—at little more than the cost of simply overhauling. And Electro-Motive's policy of making improvements applicable to old models means you get back a locomotive that incorporates the latest standards of service life and maintenance reductions.

After full inspection of the locomotive, exact details of the work to be performed are agreed upon in a conference between your representatives and our Rebuild Staff. Range estimates are given, and the rebuilding of major components is billed in accordance with Electro-Motive's published flat-rate charges—*charges that are the lowest you'll find anywhere!*

All Electro-Motive rebuilds, whether complete locomotives or individual components, carry the same warranty as new units—in many cases, double the warranty they had in the beginning. If you'd like further information on any phase of our Rebuild service, write us or call in your local Electro-Motive representative.

Electro-Motive's Locomotive Rebuild facility at La Grange covers more than one-and-two-thirds acres. Many components are rebuilt on new locomotive production lines, as well as at five other strategically located Factory Branches.

The best locomotives are even better today!

ELECTRO-MOTIVE DIVISION · GENERAL MOTORS

GENERAL MOTORS LOCOMOTIVES

La Grange, Illinois · Home of the Diesel Locomotive

Colorful new protection for Bangor & Aroostook's new freight cars—with...

Pittsburgh's Hot-Spray CARHIDE

The two-in-one freight car paint!

Puts cars into service more rapidly... keeps them looking better longer!

RAILROAD MEN are recognizing that they get more pay hours from their freight rolling stock when they paint it with Pittsburgh's Hot-Spray CARHIDE. The superior performance of this remarkable coating is being daily demonstrated on hundreds of cars such as the new fleet of colorful cars of the Bangor & Aroostook line.

This latest development in famous CARHIDE Finishes provides the equivalent of two coats of paint applied cold, with a single application. It goes on more uniformly; has better adhesion; dries quickly to a higher gloss; and provides a longer lasting, better looking finish.

Refinishing is speeded, because application time is cut in half and drying time between coats is eliminated. Shop capacity is practically doubled without increasing space, manpower or equipment.

We'll be glad to give you further details about this new time- and labor-saving freight car paint.

Pittsburgh Railway Finishes For Every Need

CARHIDE — for wood and metal freight cars of all types.

CARHIDE (Alkali- and Acid-Resistant)—for covered hopper, refrigerator and tank cars.

LAVAX SYNTHETIC ENAMELS — for locomotives and passenger cars.

IRONHIDE—for iron and steel fixed properties.

STATIONHIDE — adds beauty and attractiveness to stations.

SNOLITE—white, fume-resistant paint for signs, crossing gates, fences and cattleguards.

PITTSBURGH PAINTS

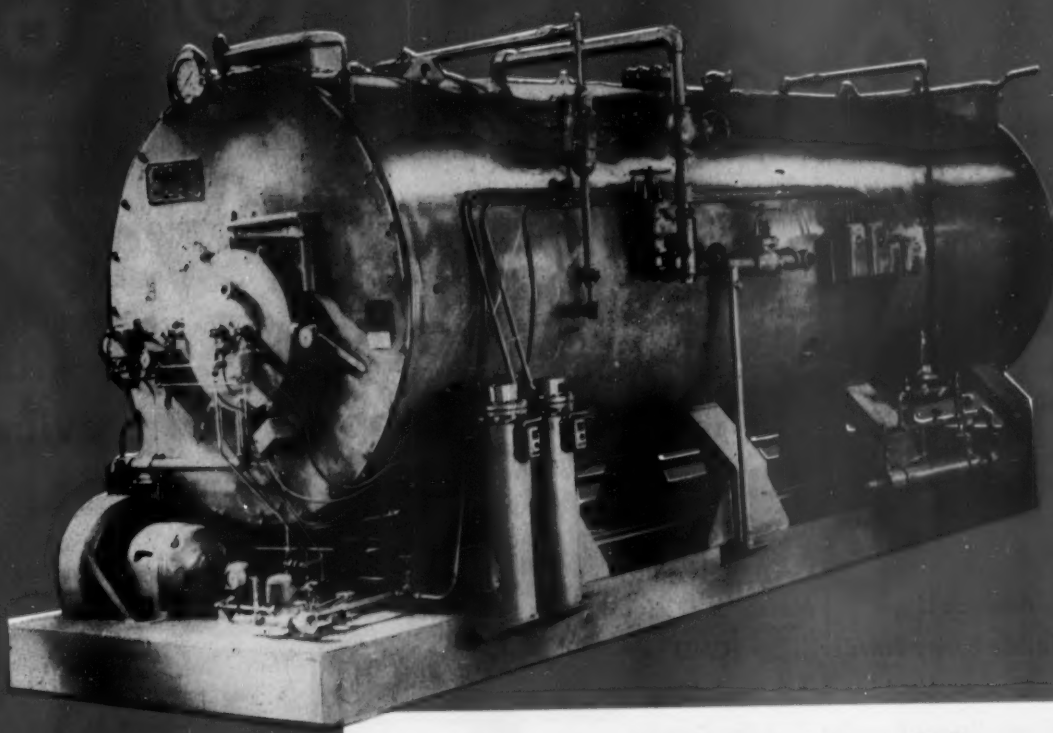
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

"THE RAILROAD BOILER"

Now You Can Lease AMESTEAM Equipment and Let the Savings Pay the Bill!



Why You Save With AMESTEAM Generators

- Completely automatic operation banishes boiler room labor
- Better than 80% thermal efficiency guaranteed
- Evaporates 15¾ lbs. of water on 1 lb. of fuel using No. 6 oil
- Available in single units from 10 to 600 hp. Design pressure—15 to 200 lbs.
- Highly suitable for multiple installations
- Accommodates oil or gas fuel
- Delivered complete — ready for service connections
- Product of Ames Iron Works, with a continuous record of quality boiler production for more than 100 years

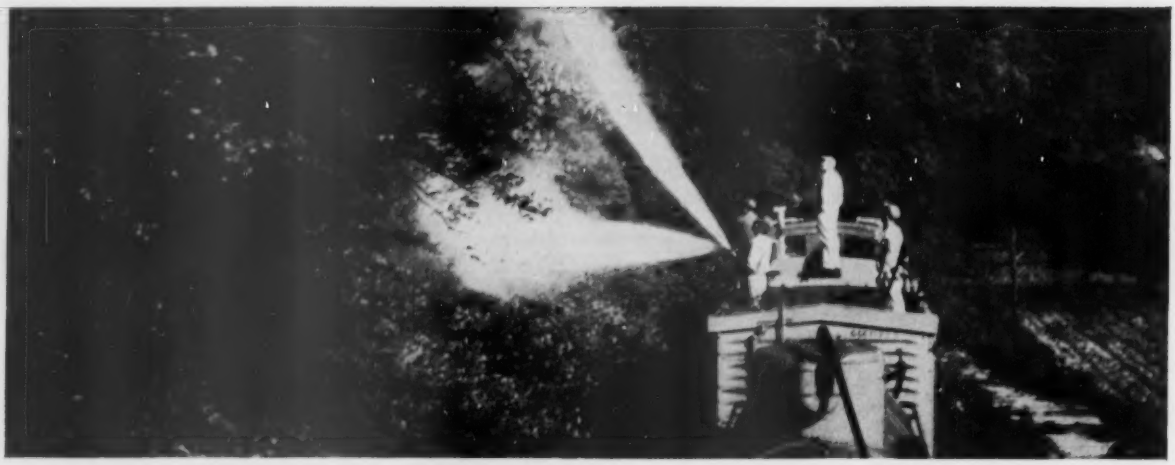
A New Leasing Plan

Here is good news for railroad men—a leasing plan that will help you put into service immediately, the proven, efficient AMESTEAM Generator and at the same time, simplify your budget by letting the savings pay the lease costs. This means that you can participate in the same important economies that "The Railroad Boiler" is providing for many roads, both here and abroad.

Under this new plan which we now offer exclusively to the railroads, you avoid capital expenditures and options can be provided for purchase. It's as good as it sounds and is a recognized, modern way of doing business in the railroad industry.

Let us tell you all about our Lease Plan. *Write, wire or phone.*

Exclusive Distributors to the Railroads
Engineering, Sales and Service
RAILROAD SUPPLY and EQUIPMENT Inc.
CLARKS SUMMIT, PA. *Phone Clarks Summit 6-2611*



Weeds-Grass-Brush?

We can solve YOUR weed control problems with the RIGHT chemicals and application service

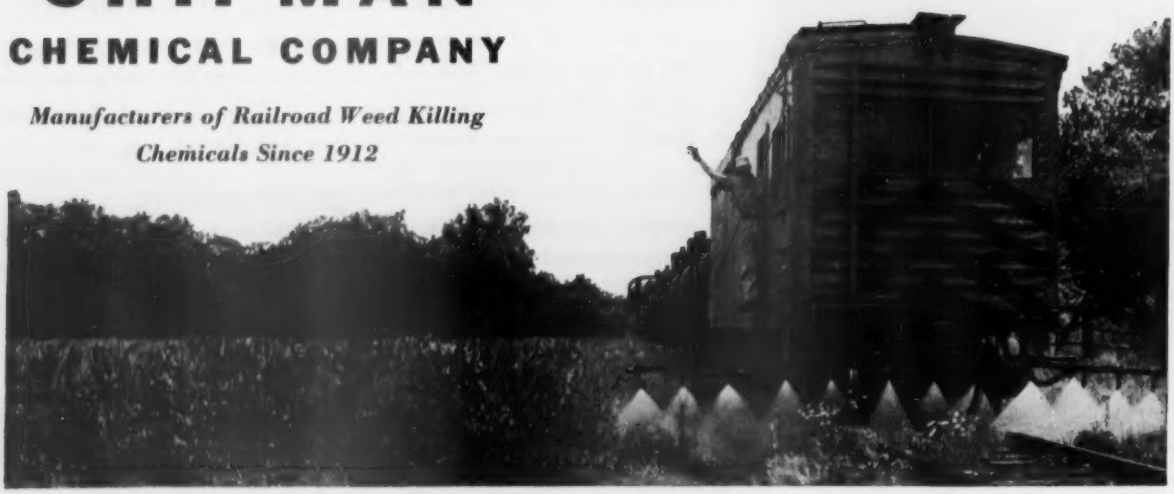
Our complete line of proven weed, grass and brush killing chemicals includes:

Atlacide Liquid	Methoxone-Chlorax
Atlacide Spray Powder	CMU
Chlorax Liquid	Brush Killer
Chlorax Spray Powder	Atlas Contact
TCA-Chlorax	Atlas "A" Arsenical

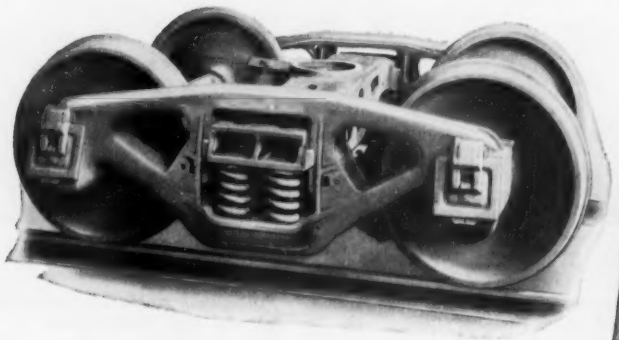
16 Strategically Located Chipman Plants

CHIPMAN
CHEMICAL COMPANY

Manufacturers of Railroad Weed Killing Chemicals Since 1912



ACCURATE UNIPLANE* JIG GRINDING OF JOURNAL BOX LID FACE IMPROVES CLOSURE



First featured on Buckeye's famed C-R (Cushion Ride) truck . now standard process on all Buckeye trucks with integral journal boxes.

FOR COMPLETE INFORMATION . . CALL or WRITE

Refer Adv. No. 11872

The Buckeye Steel Castings Co.

- COLUMBUS, O.
- NEW YORK, N.Y.
- CHICAGO, ILL.
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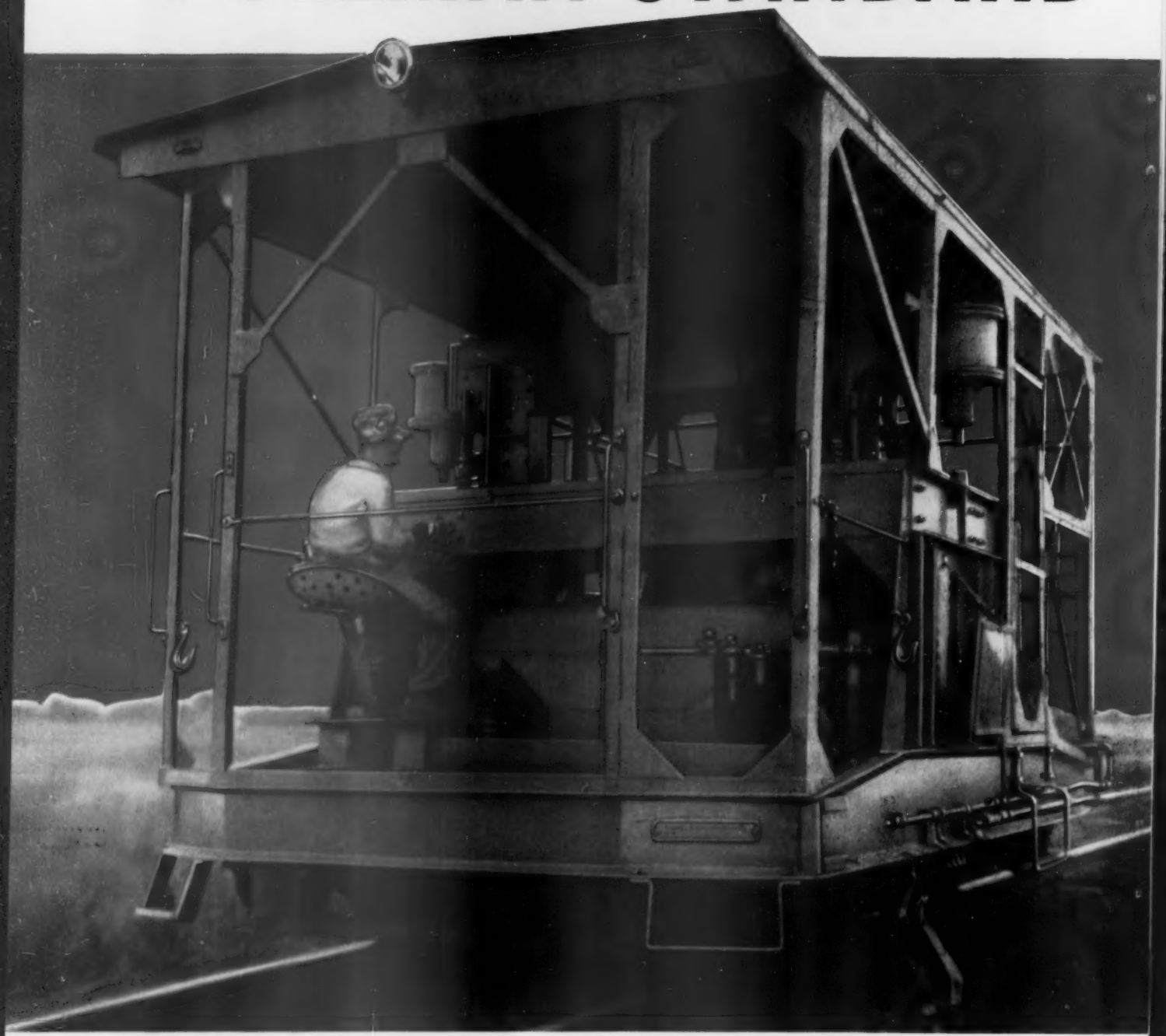
PULLMAN-STANDARD



Pullman-Standard Power Cribber—The Pullman-Standard Power Track Cribber gives two cribs a minute with a single operator. With a normal production rate of 150 to 400 track-feet per hour, its interchangeable 4-, 5-, and 6-inch digger tips enable it to crib efficiently and economically, regardless of cementation.

Pullman-Standard Power Ballaster—With a production rate of 500 to 700 feet an hour, a Pullman-Standard Power Ballaster, run by a single operator, can be efficiently manned by a crew of 10 to 15 men. Case history studies made on 16 railroads prove that this unit will give more feet of finished tamped track per hour, with less labor and maintenance, than any other production tamper.

Pullman-Standard Power Cleaner and Winch Car Team—For the first time both track shoulders can be cleaned simultaneously at 1000 to 1200 feet per hour with only four men. Even in multiple track territory, the shoulder plus half the six-foot are cleaned to a depth of eight to ten inches below the tie base at the same high rate and with the same low labor complement. Your ballast cleaning costs can be reduced by as much as 50%.

POWER CRIBBER

- 100-400 feet of finished cribbed track per hour.
- From loose sand and cinders to cemented rock, no ballast is too tough.
- Will clean cribs down to 4 inches in width.
- Adjusts to varying rail heights, digging depths.
- Operated by one man.
- Eliminates costly hand labor.
- Due to special clearance features, can be used to crib and lower track in tunnels and along station platforms.
- Designed for rugged service, easy maintenance.
- Cribs at 8 to 30 cents per track foot.
- PS Cribbers sold in the 1930s are still in service.

We will be pleased to give you complete information on better, faster, lower cost mechanized track maintenance with Pullman-Standard Track Equipment. Just write or phone the Pullman-Standard office located nearest you.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

75 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON

Condensed Story of the Improved Chilled Car Wheel

The availability, cost, and performance of the chilled car wheel have enabled it to maintain supremacy through the evolution from light loads in the early days to the heaviest loads that the rails can carry today. Approximately 54% of all freight cars in the U. S. and Canada are equipped with chilled car wheels, and it is estimated that there are over 10 million chilled car wheels in service.

Production of chilled car wheels in 22 cities throughout the U. S. assures quick, low cost delivery from the AMCCW plant near you.

The value of the chilled car wheel may be explained by the many direct and indirect savings which are credited to its use. Most direct and tangible is the almost 50% saving in first cost, whether for new cars or for repairs.

Chilled car wheels used for repairs or maintenance are usually sold on a conversion basis, whereby the purchaser exchanges an equal tonnage of scrap wheels for new ones and pays only for the conversion cost. This exchange feature eliminates the scrap wheel problem. It assures a ready outlet for scrap wheels.

Storehouse costs are lower because the proximity of foundries prepared to make immediate delivery obviates the need for carrying a large stock of wheels. This proximity of wheel foundries is also an important factor in reduced shipping charges.

After mounting, usually at 50 to 60 tons pressure, wheels are measured at three points to check accuracy of gage, alignment and direction of bore.

Besides the advantages inherent in the location of AMCCW plants, the characteristics of the chilled car wheel, with its blend of hard chilled iron at the tread and softer gray iron at the hub, offer definite benefits in service. Some of these are noted below:

Hub metal is soft gray iron easily machinable, thus insuring lowest cost for labor and machinery in the fitting of wheels to axles.

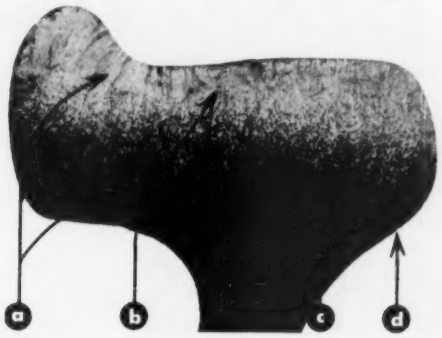
Compressive strength is unexcelled, hence the heaviest loads can be carried with entire freedom from cold flowing of metal on tread surface.

Extreme hardness of the tread metal gives maximum amount of service with minimum loss of metal and assures retention of rotundity throughout the life of the wheel.

Mounting chilled wheels on axles is less critical due to the relatively low modulus of elasticity of cast iron, hence greater variation in fitting allowance can safely be tolerated. Records show that the probability of chilled wheels coming loose on axles is less than that of wheels of other metal.

Tests show that stress concentration in wheel seat of axle is lower when the softer gray iron hub is pressed on the axle—hence axle failures in the wheel seat are practically unknown when chilled wheels are used.

The damping property of cast iron is five times greater than that of metal used for wheels of other types. This

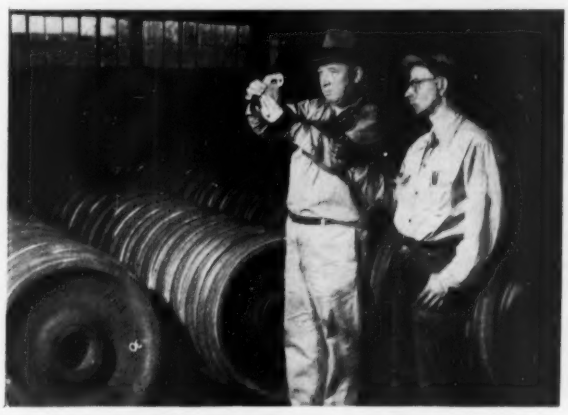


Though the contour of the tread was redesigned in the 1950 wheel, improvements have been continuous over many years. For instance, in the past decade, the following changes have been incorporated:

(a) 1941-1946 Improved control of mottled iron formation, providing clearer chill at tread and more impact resistant gray iron backing.
(b) 1947 More rigid inspection and standards for rotundity adopted for wheels shipped from AMCCW plants.
(c) 1945 AMCCW plants adopt limitation on chill depth in rim.
(d) 1945 Rim thickness increased.

greater ability to restrain and check vibration is beneficial from the standpoint of axle stresses and loose wheels. There are also indications that the use of chilled wheels is beneficial from the standpoint of cut journals and hot boxes.

Abrasion of rails from wheel contact is less with chilled wheels than with wheels of other metal.



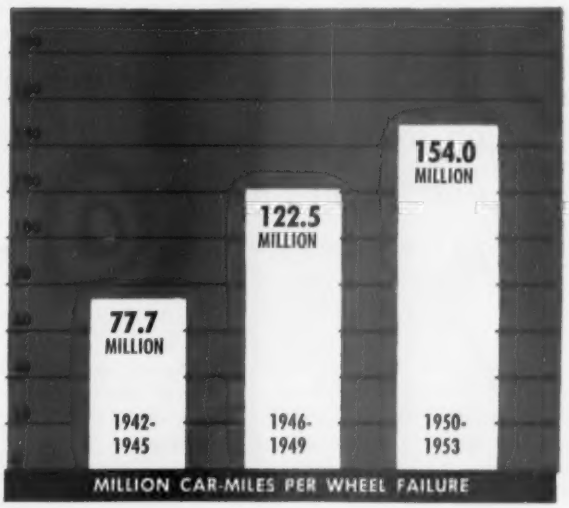
When the general inspector visits an AMCCW foundry, he not only checks the inspection methods but molding procedure, cupola, pouring, and annealing practices. It is also standard practice for him to check all gages in use by the resident inspector, as illustrated.

Improvement through research

The Association of Manufacturers of Chilled Car Wheels was founded in 1908 with the primary object of improving the chilled car wheel. Notable accomplishments include metallurgical and design improvements that have made possible better control of chill depth and chill and mottle formation in wheel treads, providing an appreciable increase in resistance to impact stresses and improving wheel safety to a point where it is at least equal to that of any other type of railroad wheel.

Improvement through inspection

The Association maintains a complete inspection service, operating through field inspectors stationed at each member plant. These inspectors follow every lot of wheels through the entire process of manufacturing and, following routine inspection, file complete reports at Association headquarters. The work of the resident inspectors is supervised by the Association's traveling general inspectors, who visit member plants at regular intervals.



Continuous improvement in the performance of chilled car wheels is shown in chart form for three four-year periods. The year 1953 alone was 50% better than any single year since records have been kept. When all derailments charged to wheels by the I.C.C. are taken into consideration, the AMCCW chilled car wheel has the best safety record of any type of wheel in freight car service.

Association of Manufacturers of Chilled Car Wheels

445 North Sacramento Blvd., Chicago 12, Illinois

Member Companies:

Albany Car Wheel Co.
ACF Industries, Inc.
Marshall Car Wheel & Foundry Co.
Southern Wheel Div. (American Brake Shoe Co.)
Griffin Wheel Co.
Pullman-Standard Car Mfg. Co.

This information was condensed from the 64-page booklet, "The Chilled Car Wheel," a copy of which will be sent on request.

BRAND NEW ORE-HAULING OPERATION

uses *LOW-COST SOLID BEARINGS*

for ALL CARS AND LOCOMOTIVES

U.S. Steel's Orinoco Mining Company standardizes on solid bearings with "Twinplex Alarm" and "Kool-End" features for all equipment in year-round non-interchange ore movement.

DOWN in Venezuela, a new ore-gathering system has just been completed by Orinoco Mining Company, covering 90 miles from ore fields in the Cerro Bolivar area to ore-conditioning plant and docks at Puerto Ordaz. Initial equipment orders called for 560 100-ton cars and 9 1600 h.p. B-L-H diesel-electrics — *all solid bearing equipped.* Orinoco expects to move 3,000,000 tons in 1954 — eventually plans operation of 125-car units. Short runs will permit rapid turnarounds, and cars will make upwards of 25,000 miles per year when operation is in full swing.

Orinoco chose solid bearings principally because of their low initial cost and the ease and economy with which they can be maintained. Dimensionally, the car journal bearings conform to standard AAR specifications for 6½" x 12" journals. They differ in that each is equipped with smoke and odor alarm cartridges for early detection of any overheated condition before it can become serious. The car bearings also have "Kool-Ends"—a thicker babbitt surface for both contact ends to reduce journal friction and provide cooler operating temperatures.

ATA Bearing Design for Locomotives.

Orinoco diesel-electrics use an ATA journal bearing design. These bearings are interchangeable with standard AAR bearings but different in that there's a deep side wall construction, providing greater journal-to-bearing contact area and preventing journals from rolling out from under the bearings. ATA bearings hug the journals — even during impacts such as occur whenever cars are "bunched" for any reason. Like the car bearings, these locomotive journal bearings also have "Twinplex" smoke and odor cartridges and "Kool-Ends."

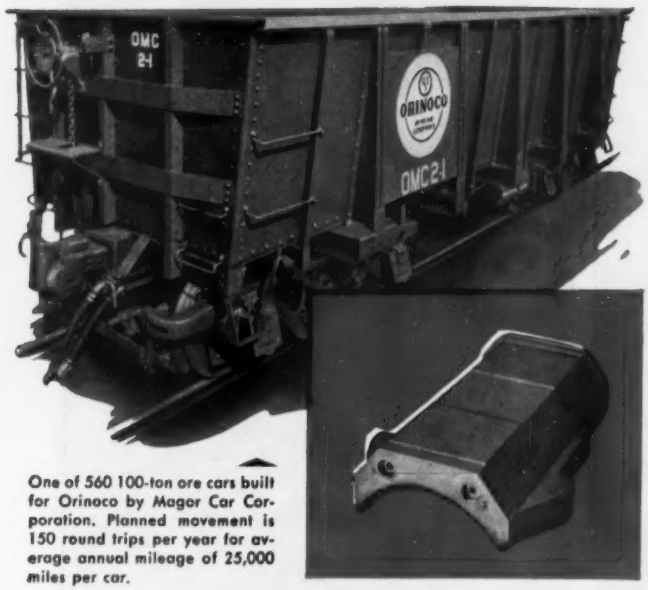
Freight Car Bearing Performance

The figures at the right clearly indicate a trend to improved journal bearing performance, even with today's faster train speeds and heavier loads.

Higher standards of maintenance and inspection, combined with selective adoption of available developments, can continue to improve solid bearing performance — to the point where the incidence of hot boxes may be reduced to insignificance.

PERIOD	TOTAL CAR MILES	CAR MILES PER HOT BOX	% INCREASE OVER 1951
1951	34,726,490,070	172,703	—
1952	34,313,975,558	190,109	10%
1953	34,355,017,965	219,762	27%

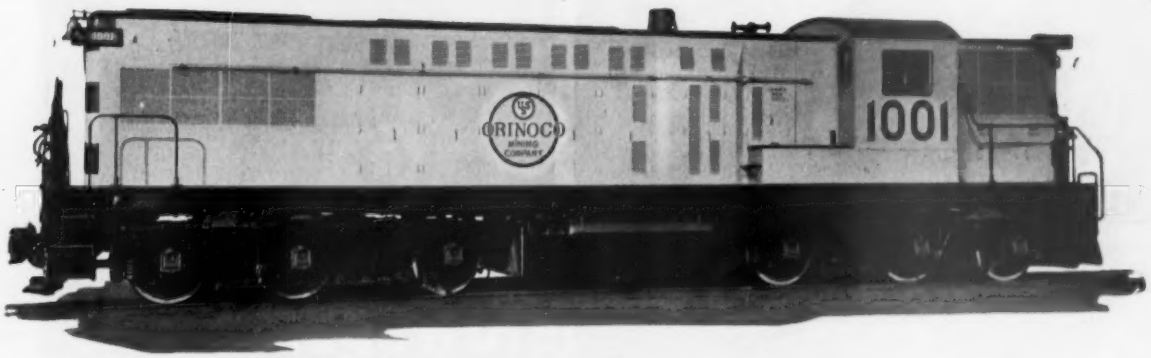
now under way in Venezuela



One of 560 100-ton ore cars built for Orinoco by Magor Car Corporation. Planned movement is 150 round trips per year for average annual mileage of 25,000 miles per car.

Map showing route of ore cars from mine area to ore conditioning plant and port at junction of Orinoco and Caroni Rivers. Orinoco River was dredged to this point to permit operation of sea-going vessels. Total length of system is about 90 miles—with heavy movement down grade.

At left is car journal bearing like those applied to Orinoco cars. Size is 6½" x 12"—keeping maximum bearing loads well within recommended limits.



First of 9 B-L-H 1600 h.p. diesels with which Orinoco is beginning operations. Note six wheel trucks have standard boxes for solid bearings.

How Twinplex Alarm Bearings Work.

Twinplex Alarm Bearings provide a positive means of early detection of any overheated bearing condition. The smoke and odor cartridges are inserted in holes drilled longitudinally through the bearing back. Each cartridge is sealed with fusible metal that melts if temperatures of 350° F. are reached for any reason. When this happens, for a period of about 8 minutes one cartridge releases a heavy pungent odor (ethyl mercaptan) and the other a dense white smoke.

Ask us to give you complete details about Twinplex Alarm Bearings and other Magnus developments for improved freight car performance. Just write to Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Blvd., Chicago 4.

MAGNUS

Solid Bearings

Right for Railroads

...in performance...in cost

MAGNUS METAL CORPORATION *Subsidiary of* **NATIONAL LEAD COMPANY**

Photos: courtesy The Budd Company

Passenger comfort, unlimited

Today's modern air-conditioned passenger cars call for simple and reliable apparatus which must provide dependable service at the lowest over-all cost. That's why it's so important to investigate the tremendous advantages in EDISON batteries for standby power for the electrical systems of these cars. They are of steel-cell construction, built to take rugged handling like no other kind of battery construction can.

Electrically, too, EDISON batteries are profitably different—they have no prescribed discharge limits and, therefore, operate self-regulating a-c inversion apparatus correspondingly longer without injury to the battery. Recovery after discharge is usually just as rapid as generator output permits, resulting in high road capacity and virtual elimination of yard charging.

Roads using as many as 2000 sets of EDISON batteries in both air-conditioned and non-air-conditioned cars report average service life ranging from 18 to 26 years. Find out now about EDISON'S exclusive advantages by sending for our bulletin 3802 and requesting a visit from the Edison field engineer nearest you. Write Edison Storage Battery Division, Thomas A. Edison, Incorporated, West Orange, New Jersey.

Most dependable power . . .
lowest over-all cost
you get both with an EDISON

EDISON
Nickel • Iron • Alkaline
STORAGE BATTERIES

EDISON ALSO MAKES THE FAMOUS "V.P." VOICEWRITER AND THE TELEVOICE SYSTEM

Two Road Systems at Work! By Hungerford

We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, or text.

E Edgewater Steel Company

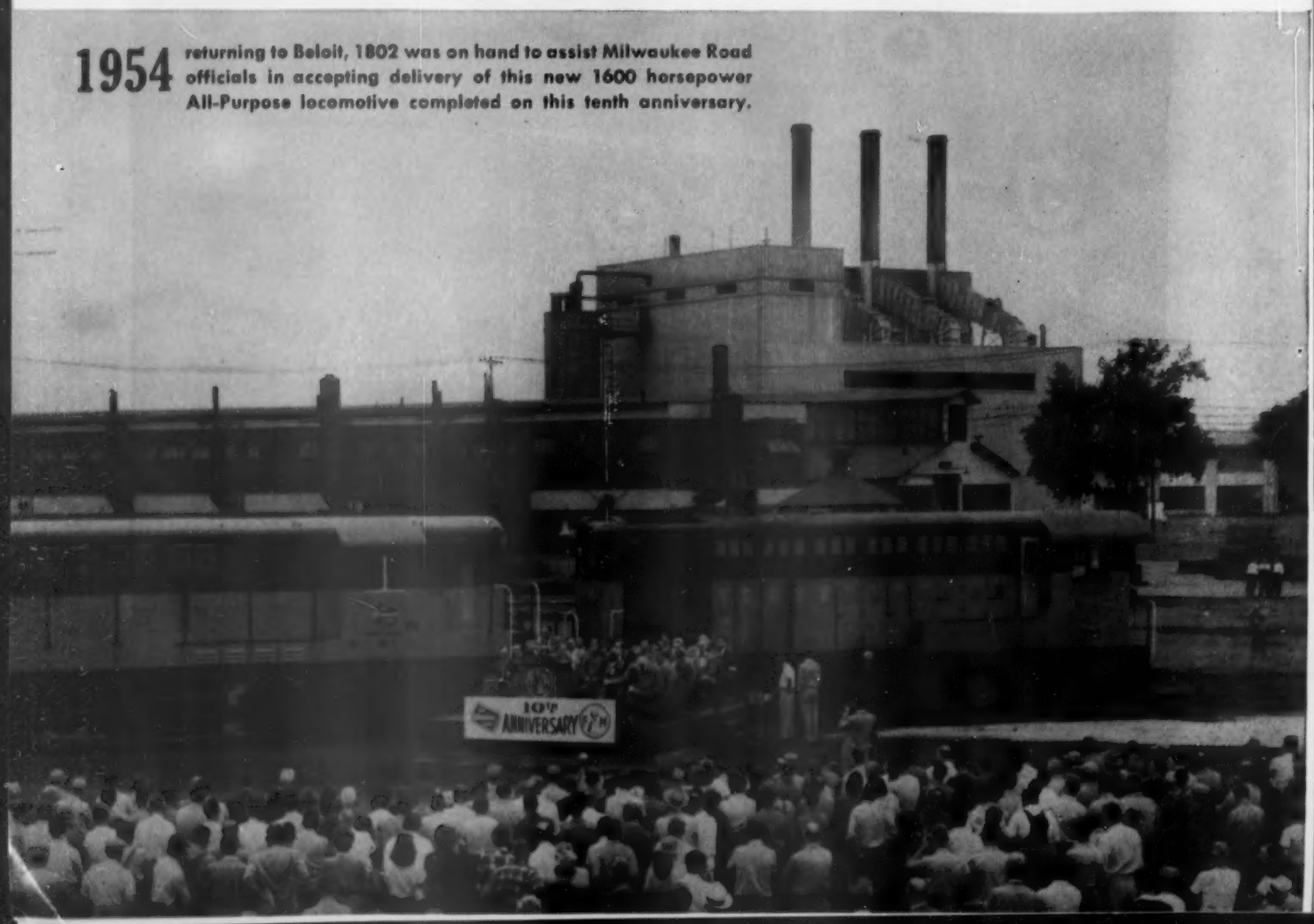
PITTSBURGH, PA.

Serving America's Railroads

ROLLED STEEL TIRES
with ROLLED STEEL WHEELS
AND DRAFT GEARS

A Decade of Fairbanks-Morse Diesel Power on the Milwaukee Road

1954 returning to Beloit, 1802 was on hand to assist Milwaukee Road officials in accepting delivery of this new 1600 horsepower All-Purpose locomotive completed on this tenth anniversary.



1944 **10 years ago, engine number 1802 was delivered to the Milwaukee Road here in Beloit, Wisconsin. This 1000 horsepower switcher was the first Fairbanks-Morse locomotive—the start of Opposed-Piston power on the rails.**

Ceremonies ten years ago marked delivery of the first Fairbanks-Morse locomotive built—the beginning of a decade of Opposed-Piston power on the Milwaukee Road.

Opposed-Piston performance, starting with that first 1000 horsepower switcher, is the reason the Milwaukee Road has steadily added O-P horsepower at a rate equal to a 1600 hp. unit—*every 30 days for 10 years.*

On their motive power roster you'll find a total of 125 Fairbanks-Morse units: Road Freight and Passenger locomotives, All-Purpose units—and a fleet of switchers that has set a new standard for low cost-per-hour yard service on the Milwaukee Road today.

In the past decade, Opposed-Piston locomotives have increased the vision of those seeking operating efficiency through dieselization.

Railroad management increasingly turns to today's trendmaker in the industry—Fairbanks-Morse.

Fairbanks, Morse & Co.
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Freight Operating Statistics of Large Railways — Selected Items

	Region, Road and Year		Miles of road operated	Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (thousands)	Car Miles: Per cent loaded	Ton-miles (thousands): Gross excl.locos & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine	1954	1,664	250,074	253,668	7,441	8,626	65.0	564,877	222,370	71	2	4	5.2
		1953	1,668	252,653	258,085	10,258	9,442	68.9	592,645	243,326	82	5	12	12.1
	N. Y., N. H. & Hfd	1954	1,747	278,221	278,221	17,247	11,364	65.9	712,025	283,888	94	..	4	4.1
		1953	1,748	301,692	301,772	17,63	12,145	68.3	752,878	316,238	97	..	3	3.0
Great Lakes Region	Delaware & Hudson	1954	793	181,675	185,597	9,307	8,379	65.6	581,586	291,060	36	5	6	12.8
		1953	793	205,868	211,631	11,290	9,839	71.3	677,417	359,225	46	25	8	10.1
	Del., Lack. & Western	1954	962	248,371	259,557	20,072	10,835	65.5	722,470	306,840	60	..	2	3.2
		1953	962	277,300	291,201	23,101	12,847	70.1	841,922	385,132	67	..	1	1.5
	Erie	1954	2,225	538,264	541,283	19,937	29,073	66.3	1,861,049	714,810	162	..	3	1.8
		1953	2,237	588,904	593,493	25,160	33,469	68.3	2,115,625	869,140	166	..	2	1.2
	Grand Trunk Western	1954	952	240,386	244,190	1,786	7,975	58.4	572,283	222,407	59	1	15	20.0
		1953	952	282,035	287,057	2,009	8,783	60.2	617,760	248,332	64	1	11	14.5
	Lehigh Valley	1954	1,150	201,618	205,281	5,871	9,779	63.6	685,575	311,630	31	2	1	2.9
		1953	1,151	227,917	232,287	7,298	11,234	68.8	768,398	369,551	31	2	1	2.9
	New York Central	1954	10,663	2,246,775	2,289,413	84,768	87,948	59.4	6,345,010	2,742,923	576	132	142	16.7
		1953	10,667	2,668,470	2,740,717	109,366	106,096	61.0	7,729,737	3,464,291	751	54	188	18.9
	New York, Chic. & St. L.	1954	2,161	646,481	674,250	6,406	25,704	63.1	1,809,269	766,839	158	43	37	15.5
		1953	2,160	770,829	800,949	8,248	29,652	65.9	2,089,894	928,986	206	11	31	12.5
	Pitts. & Lake Erie	1954	221	51,251	51,251	60	2,284	64.1	199,792	121,365	15	7	2	8.3
		1953	221	78,001	79,783	....	3,577	67.8	308,132	192,053	23	6	7	19.4
	Wabash	1954	2,381	504,609	505,503	6,474	21,763	64.4	1,407,760	520,339	103	..	..	..
		1953	2,381	539,436	543,510	8,225	24,061	67.8	1,543,165	621,762	103	18	28	18.8
Central Eastern Region	Baltimore & Ohio	1954	6,077	1,409,618	1,543,400	130,300	56,683	60.7	4,392,796	2,100,110	426	80	107	17.5
		1953	6,081	1,657,714	1,841,300	188,091	68,697	63.8	5,299,914	2,656,196	481	28	123	19.5
	Central of New Jersey	1954	209	53,753	58,008	172	3,167	64.1	364,113	239,676	15	..	..	..
		1953	213	67,908	73,614	319	3,824	59.8	458,234	296,693	18	26	..	..
	Central of Pennsylvania	1954	613	122,170	122,883	5,562	4,634	62.9	348,967	176,302	57	4	10	14.1
		1953	617	133,477	139,066	10,408	5,340	66.3	404,036	212,566	71	8	8	9.2
	Chicago & Eastern Ill.	1954	868	120,796	120,796	2,762	4,934	65.8	351,974	176,897	25	..	3	10.7
		1953	868	121,350	121,350	2,656	4,917	67.7	331,208	161,324	27	..	1	3.6
	Elgin, Joliet & Eastern	1954	236	76,230	77,725	....	2,422	63.6	192,369	103,290	33	6	2	4.9
		1953	236	101,650	103,396	98	3,301	65.2	263,376	144,156	40	..	1	2.4
	Pennsylvania System	1954	9,906	2,620,940	2,788,756	187,530	109,957	61.3	8,089,812	3,669,744	737	338	365	25.3
		1953	9,939	3,206,856	3,440,032	299,133	133,985	64.9	9,795,590	4,746,837	1,052	142	320	21.1
	Reading	1954	1,304	286,894	290,534	10,278	10,766	59.7	853,263	425,320	148	27	15	7.9
		1953	1,309	357,133	363,641	17,353	13,607	64.4	1,070,032	564,867	176	20	15	7.1
	Western Maryland	1954	857	142,762	150,093	8,643	5,276	60.5	445,914	243,289	50	29	1	1.3
		1953	873	174,903	191,194	15,944	6,488	65.9	528,142	301,855	86	35	4	3.2
Pocahontas Region	Chesapeake & Ohio	1954	5,032	1,204,964	1,226,346	29,656	50,695	57.2	4,246,423	2,337,819	313	81	175	30.8
		1953	5,034	1,296,102	1,328,673	35,912	59,258	57.4	5,085,813	2,809,781	412	57	182	28.0
	Norfolk & Western	1954	2,113	596,527	626,308	43,626	27,246	57.3	2,515,502	1,344,137	199	55	27	9.6
		1953	2,113	651,613	686,694	48,988	30,829	59.4	2,758,753	1,501,989	229	25	19	7.0
Southern Region	Atlantic Coast Line	1954	5,341	822,418	822,418	8,884	24,434	58.0	1,705,235	711,499	239	..	8	3.2
		1953	5,367	821,304	821,313	9,371	24,892	60.4	1,750,326	776,755	241	..	7	2.8
	Central of Georgia	1954	1,731	183,875	183,901	2,048	7,001	67.2	471,460	218,906	71	..	2	2.7
		1953	1,754	204,914	204,962	2,702	7,495	67.5	505,319	233,628	71	16	..	..
	Gulf, Mobile & Ohio	1954	2,718	272,545	272,545	614	14,069	68.2	969,859	467,624	86	..	3	3.4
		1953	2,718	304,568	304,568	238	15,627	70.5	1,041,475	506,755	86	..	3	3.4
	Illinois Central	1954	6,537	1,216,432	1,218,008	39,468	45,732	61.4	3,297,400	1,469,879	492	95	85	12.6
		1953	6,538	1,379,544	1,382,606	46,501	49,729	62.9	3,583,090	1,644,285	533	77	55	8.3
	Louisville & Nashville	1954	4,722	853,301	878,329	17,467	30,464	61.1	2,270,145	1,106,636	231	66	13	4.2
		1953	4,728	991,112	1,044,470	20,920	35,344	63.8	2,624,038	1,333,544	252	62	40	11.3
	Nash., Chatt. & St. Louis	1954	1,032	165,222	168,736	3,392	5,543	67.0	359,331	158,482	48	..	5	9.4
		1953	1,032	170,350	174,474	3,750	5,806	72.5	368,736	173,808	48	..	4	7.7
	Seaboard Air Line	1954	4,067	630,871	630,871	2,137	23,694	61.5	1,688,822	712,632	143	..	11	7.1
		1953	4,070	613,674	613,674	1,599	23,109	63.5	1,614,824	711,359	142	4	7	4.6
	Southern	1954	6,262	899,999	900,114	11,900	36,102	64.9	2,404,069	1,069,973	276	..	3	1.1
		1953	6,263	958,419	958,476	12,393	37,661	69.6	2,413,487	1,113,330	252	22	22	7.4
Northwestern Region	Chicago & North Western	1954	7,850	693,510	695,436	10,437	28,651	62.6	2,054,855	888,181	176	44	66	23.1
		1953	7,849	775,995	780,032	14,415	31,907	65.7	2,266,912	989,117	252	28	80	22.2
	Chicago Great Western	1954	1,437	131,207	131,207	170	6,859	66.4	470,366	211,688	31	..	2	6.1
		1953	1,435	136,838	136,956	534	8,341	70.4	563,955	288,195	32	..	2	5.9
	Chic., Milw., St. P. & Pac.	1954	10,633	938,439	955,338	22,418	38,731	64.0	2,669,996	1,182,777	310	71	48	11.2
		1953	10,662	1,038,183	1,058,388	35,935	43,014	65.5	2,967,924	1,362,342	346	64	39	8.7
	Chic., St. P., Minn. & Omaha	1954	1,606	155,220	156,318	4,730	5,009	65.8	354,405	158,118	60	1	21	25.6
		1953	1,606	146,158	148,270	5,729	4,757	71.1	316,797	150,069	69	1	24	25.5
	Duluth, Missabe & Iron Range	1954	566	149,788	150,515	962	7,178	51.0	774,451	461,298	68	2	4	5.4
		1953	567	204,496	205,591	1,659	9,555	51.0	991,004	608,772	62	..	5	7.5
	Great Northern	1954	8,294	1,090,646	1,095,256	28,088	45,961	62.6	3,592,748	1,789,176	257	166	42	9.0
		1953	8,291	1,123,992	1,125,073	34,393	46,691	63.4	3,642,732	1,848,956	306	133	44	9.1
	Minneap., St. P. & St. Ste. M.	1954	4,169	387,751	390,483	3,528	12,884	66.9	854,673	404,037	103	2	13	11.0
		1953	4,172	392,006	397,137	4,011	13,649	67.5	919,672	446,005	100	..	12	10.7
	Northern Pacific	1954	6,570	825,307	849,056	33,964	31,832	62.2	2,326,792	1,030,216	308	28	56	14.3
		1953	6,583	811,931	836,372	33,896	33,568	69.9	2,319,485	1,099,911	314	22	63	15.8
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1954	13,076	2,304,379	2,406,976	69,105	103,334	65.2	7,046,590	2,625,867	551	112	31	4.5
		1953	13,095	2,929,693	3,065,033	110,368	122,517	61.0	8,650,625	3,066,195	628	64	50	6.7
	Chic., Burl. & Quincy	1954	8,824	1,051,494	1,047,504	28,085	42,031	67.8	2,760,931	1,233,930	239	70	30	8.8
		1953	8,833	1,130,471	1,133,573	35,977	47,306	69.1	3,176,374	1,495,510	292	45	84	20.0
	Chic., Rock I. & Pac.	1954	7,861	976,699	978,223	3,052	36,747	59.2	2,716,941	1,068,924	175	..	8	4.4
		1953	7,895	1,064,237	1,065,911	6,270	39,454	61.8	2,839,471	1,180,078	172	13	11	5.6
	Denver & R. G. Wn.	1954	2,164	272,750	288,959	24,699	12,598	73.6	842,835	406,737	55	61	22	15.9
		1953	2,313	304,193	330,796	37,302	15,103	74.7	1,018,121	510,947	82	44	37	22.7
	Southern Pacific	1954	8,067	2,359,975	2,481,040	280,090	103,808	60.3	7,444,117	2,818,348	672	22	127	15.5
		1953	8,058	2,465,375	2,603,742	319,320	107,936	63.6	7,439,651	2,878,755	693	5	143	17.0
	Union Pacific	1954	9,816	2,177,603	2,229,433	109,029	95,788	63.7	6,510,672	2,673,968	407	349	102	11.9
		1953	9,824	2,471,358	2,554,381	170,690	103,333	68.0	6,919,757	3,033,810	564	125	144	17.3
	Western Pacific	1954	1,190	217,571	219,667	9,364	9,568	71.4	619,347	285,524	40	6	..	..
		1953	1,190	245,644	254,001	20,579	11,980	72.7	794,447	383,012	39	12	4	7.3
Southwestern Region	International-Gt. Northern*	1954	1,103	136,529	136,529	33	5,334	64.8	395,468	181,684	45	..	3	6.3
		1953	1,104	164,566	164,566	22	6,140	66.3	446,911	206,594	50	2	3	5.5
	Kansas City Southern	1954	886	127,310	127,313	34	7,416	66.2	516,448	228,004	26	..	1	3.7
		1953	886	163,526	163,526	45	8,540	63.7	622,337	286,155	26	1	..	..
	Mo.-Kans.-Texas Lines	1954	3,229	352,252	352,252	3,446	13,423	62.2	910,095	391,654	85	..	1	1.2
		1953	3,230	388,368	388,368	4,019	14,478	64.0	949,861	414,941	87	6	..	..
	Missouri Pacific*	1954	6,896	933,474	934,944	10,677	40,097	66.5	2,727,843	1,207,051	243	71	83	20.9
		1953	6,917	1,210,785	1,214,880	15,251	46,841	67.6	3,171,470	1,441,501	312	30	62	15.3
	Texas & Pacific	1954	1,827	317,453	317,453	2,896	14,077	61.1	1,007,104	356,695	58	..	3	4.9
		1953	1,831	367,070	367,070	3,759	15,450	61.6	1,094,126	388,346	60	..	..	..
	St. Louis-San Francisco	1954	4,564	590,820	591,007	5,666	21,985	66.5	1,457,952	647,172	120	..	11	8.4
		1953	4,564	616,684	616,797	6,005	23,458	65.2	1,605,660	720,315	185	..	3	1.6
	St Louis-San. Fran. & Texas.	1954	156	22,024	22,024	....	674	60.9	48,003	20,948	3	..	..	..
		1953	156	22,466	22,466	....	719	61.5	52,278	23,748	3	..	..	..
	St. Louis Southw. Lines	1954	1,555	292,449	292,481	1,406	13,216	67.8	831,395	371,645	56	10	8	10.8
		1953	1,561	319,099	319,113	4,299	15,239	69.7	952,174	425,635	61	18	9	10.2
	Texas & New Orleans	1954	4,279	664,632	664,632	4,790	23,209	62.3	1,770,247	744,621	163	..	26	13.8
		1953	4,279	755,312	755,312	9,652	26,958	64.6	1,859,820	800,649	194	..	39	16.7

For the Month of June 1954 Compared with June 1953

Region, Road and Year		Freight cars on line				G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
		Home	Foreign	Total	Per Cent B.O.									
New Eng. Region	Boston & Maine 1954	2,971	6,890	9,861	4.4	36,865	2,263	891	25.8	736	43.9	4,455	16.3	123.3
	1953	1,560	8,133	9,693	2.1	37,995	2,349	964	25.8	855	48.2	4,863	16.2	99.3
	N. Y., N. H. & Htfd 1954	3,128	12,141	15,269	3.5	41,928	2,559	1,020	25.0	617	37.5	5,417	16.4	119.1
	1953	2,070	13,699	15,769	3.3	39,786	2,496	1,048	26.0	692	38.9	6,030	15.9	124.9
Great Lakes Region	Delaware & Hudson 1954	6,884	3,697	10,581	5.9	58,433	3,218	1,611	34.7	894	39.2	12,235	18.3	152.0
	1953	4,205	5,263	9,468	5.1	61,018	3,307	1,754	36.5	1,176	45.2	15,000	18.5	101.3
	Del., Lack. & Western 1954	8,459	7,759	16,218	5.0	49,184	2,975	1,263	28.3	618	33.3	10,632	16.9	166.3
	1953	5,898	9,609	15,507	5.1	50,856	3,100	1,418	30.0	802	38.2	13,345	16.8	176.0
	Erie 1954	12,058	15,602	27,660	5.2	64,721	3,491	1,341	24.6	858	52.6	10,709	18.7	125.3
	1953	8,207	20,607	28,814	3.4	64,912	3,630	1,491	26.0	1,023	57.7	12,951	18.1	134.2
	Grand Trunk Western 1954	5,041	7,828	12,869	4.9	49,955	2,395	931	27.9	573	35.2	7,787	21.0	118.0
	1953	3,479	9,591	13,070	4.8	45,699	2,204	886	28.3	638	37.5	8,695	20.9	131.7
	Lehigh Valley 1954	10,092	6,424	16,516	5.8	68,081	3,451	1,569	31.9	638	31.4	9,033	20.0	223.5
	1953	7,159	10,062	17,221	4.4	65,827	3,426	1,648	32.9	721	31.9	10,702	19.5	251.3
	New York Central 1954	85,479	73,063	158,542	11.3	49,955	2,875	1,243	31.2	568	30.6	8,575	17.7	101.9
	1953	69,013	94,372	163,385	8.3	49,457	2,942	1,319	32.7	700	35.1	10,826	17.1	107.6
	New York, Chic. & St. L. 1954	10,289	13,455	23,744	7.6	51,716	2,846	1,206	29.8	1,060	56.3	11,828	18.5	102.4
	1953	7,089	18,161	25,250	5.5	48,792	2,755	1,225	31.3	1,223	59.3	14,336	18.0	120.5
	Pitts. & Lake Erie 1954	11,028	6,609	17,637	6.4	57,793	3,904	2,371	53.1	230	6.8	18,305	14.8	82.7
	1953	3,538	9,930	13,468	7.5	58,403	3,989	2,486	53.7	489	13.4	28,967	14.8	84.0
	Wabash 1954	9,974	10,251	20,225	6.6	64,182	2,802	1,036	23.9	867	56.3	7,285	23.0	175.4
	1953	7,921	12,223	20,144	8.1	63,849	2,879	1,160	25.8	1,027	58.6	8,704	22.3	131.1
Central Eastern Region	Baltimore & Ohio 1954	62,693	37,614	100,307	12.5	48,809	3,158	1,510	37.1	707	31.4	11,519	15.7	95.1
	1953	51,943	48,876	100,819	6.6	46,026	3,253	1,630	38.7	882	35.7	14,560	14.4	111.3
	Central of New Jersey 1954	7,145	854	7,999	10.3	104,121	6,929	4,561	75.7	998	20.6	38,226	15.4	145.6
	1953	5,072	1,313	6,385	12.1	110,765	6,857	4,440	77.6	1,421	30.6	46,431	16.4	61.2
	Central of Pennsylvania 1954	6,610	9,324	15,934	10.2	40,404	2,961	1,496	38.0	387	16.2	9,587	14.1	77.6
	1953	3,487	10,985	14,472	7.4	40,412	3,182	1,674	39.8	498	18.9	11,484	13.4	80.0
	Chicago & Eastern Ill 1954	3,425	3,634	7,059	8.9	50,448	2,929	1,472	35.9	868	36.8	6,793	17.3	151.8
	1953	2,810	3,655	6,465	10.5	45,779	2,742	1,335	32.8	845	38.0	6,195	16.8	153.9
	Elgin, Joliet & Eastern 1954	7,761	6,699	14,460	7.5	23,055	2,623	1,409	42.6	241	8.9	14,589	9.1	82.9
	1953	7,273	12,496	19,769	5.5	20,377	2,749	1,504	43.7	247	8.7	20,361	7.9	112.5
	Pennsylvania System 1954	116,491	88,258	204,749	11.6	55,377	3,178	1,442	33.4	598	29.2	12,349	17.9	75.3
	1953	103,757	99,209	202,966	7.9	51,205	3,143	1,523	35.4	779	33.9	15,920	16.8	89.6
	Reading 1954	20,192	11,259	31,451	8.0	43,271	2,975	1,483	39.5	436	18.5	10,872	14.5	60.9
	1953	14,243	17,870	32,113	5.4	41,260	2,997	1,582	41.5	588	22.0	14,384	13.8	70.1
	Western Maryland 1954	6,977	2,131	9,108	4.5	44,717	3,189	1,740	46.1	812	29.1	9,463	14.3	73.2
	1953	5,233	2,805	8,038	6.0	42,713	3,081	1,761	46.5	1,106	36.1	11,526	14.1	59.6
Pocahontas Region	Chesapeake & Ohio 1954	58,779	22,808	81,587	3.9	66,672	3,545	1,951	46.1	964	36.6	15,486	18.9	78.4
	1953	50,256	28,431	78,687	2.7	70,511	3,943	2,179	47.4	1,202	44.1	18,605	18.0	76.4
	Norfolk & Western 1954	40,118	6,190	46,308	1.9	74,406	4,320	2,308	49.3	951	33.6	21,204	17.6	87.4
	1953	31,298	7,225	38,523	2.9	74,164	4,306	2,345	48.7	1,292	44.6	23,694	17.5	97.8
Southern Region	Atlantic Coast Line 1954	20,453	12,232	32,685	2.7	37,820	2,088	871	29.1	705	41.7	4,440	18.2	123.5
	1953	15,254	16,224	31,478	2.9	36,031	2,145	952	31.2	794	42.1	4,824	16.9	124.5
	Central of Georgia 1954	3,599	5,005	8,604	4.8	45,715	2,580	1,198	31.3	871	41.5	4,215	17.8	95.0
	1953	2,881	5,417	8,298	3.9	43,645	2,477	1,145	31.2	929	44.2	4,440	17.7	86.2
	Gulf, Mobile & Ohio 1954	6,165	8,555	14,720	3.9	69,779	3,565	1,719	33.2	1,073	47.4	5,735	19.6	110.2
	1953	4,391	9,500	13,891	4.7	67,747	3,434	1,671	32.4	1,236	54.1	6,215	19.8	122.3
	Illinois Central 1954	29,736	21,090	50,826	3.8	46,651	2,747	1,224	32.1	967	49.0	7,495	17.2	68.6
	1953	27,448	27,139	54,587	2.2	44,635	2,635	1,209	33.1	1,036	49.8	8,383	17.2	77.0
	Louisville & Nashville 1954	38,386	11,968	50,354	3.1	46,784	2,668	1,300	36.3	720	32.5	7,812	17.6	100.7
	1953	30,883	13,592	44,475	4.0	44,824	2,656	1,350	37.7	943	39.2	9,402	16.9	109.2
	Nash., Chatt. & St. Louis 1954	3,843	3,163	7,006	4.1	41,412	2,176	960	28.6	758	39.6	5,119	19.0	116.4
	1953	2,261	3,924	6,185	2.6	39,799	2,169	1,023	29.9	906	41.7	5,614	18.4	122.6
	Seaboard Air Line 1954	14,132	10,849	24,981	2.3	49,625	2,722	1,149	30.1	912	49.3	5,841	18.5	160.2
	1953	10,740	11,745	22,485	2.7	48,110	2,665	1,174	30.8	978	50.0	5,826	18.3	158.5
	Southern 1954	19,959	23,058	43,017	3.9	47,912	2,680	1,193	29.6	831	43.2	5,698	17.9	120.9
	1953	16,151	27,913	44,064	4.1	43,679	2,536	1,170	29.6	844	41.0	5,925	17.3	119.4
Northwestern Region	Chicago & North Western 1954	21,915	28,242	50,157	5.6	49,953	3,023	1,306	31.0	610	31.4	3,771	16.9	90.7
	1953	22,447	29,352	51,799	4.8	48,572	3,012	1,314	31.0	664	32.6	4,201	16.6	78.5
	Chicago Great Western 1954	2,060	4,045	6,105	3.3	69,985	3,589	1,615	30.9	1,192	58.2	4,910	19.5	138.0
	1953	1,324	5,369	6,693	3.0	71,979	4,128	2,109	34.6	1,496	61.5	6,694	17.5	141.3
	Chic., Milw., St. P. & Pac. 1954	37,847	28,419	66,266	7.0	51,862	2,856	1,265	30.5	598	30.6	3,708	18.2	83.4
	1953	35,095	31,472	66,567	4.7	50,004	2,877	1,320	31.7	684	33.0	4,259	17.5	86.4
	Chic., St. P., Minn. & Omaha 1954	1,115	7,531	8,646	4.8	31,388	2,306	1,029	31.6	639	30.8	3,282	13.7	67.9
	1953	1,168	7,320	8,488	7.0	30,520	2,238	1,060	31.5	614	27.4	3,115	14.1	62.4
	Duluth, Missabe & Iron Range 1954	14,374	588	14,962	1.8	88,671	5,457	3,250	64.3	1,026	31.5	27,167	17.1	79.3
	1953	14,512	1,025	15,537	3.1	82,818	5,092	3,128	63.7	1,298	40.0	35,789	17.1	115.0
	Great Northern 1954	25,970	19,907	45,877	2.9	55,581	3,341	1,664	38.9	1,287	52.8	7,191	16.9	87.7
	1953	25,221	20,266	45,487	3.8	51,003	3,287	1,668	39.6	1,378	54.9	7,434	15.7	85.8
	Minneap., St. P. & St. Ste. M. 1954	7,753	6,694	14,447	6.4	44,242	2,215	1,047	31.4	930	44.3	3,230	20.1	120.4
	1953	7,109	7,555	14,664	7.7	44,052	2,357	1,143	32.7	1,004	45.5	3,563	18.8	123.7
	Northern Pacific 1954	21,950	15,869	37,819	5.4	53,317	2,833	1,254	32.4	928	46.1	5,227	18.9	80.7
	1953	22,171	14,394	36,565	5.8	52,256	2,882	1,367	32.8	1,030	45.0	5,569	18.3	79.0
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1954	57,010	35,883	92,893	3.2	68,886	3,070	1,144	25.4	951	57.4	6,694	22.5	126.5
	1953	52,066	42,826	94,892	2.9	64,477	2,967	1,052	25.0	1,111	72.8	7,805	21.8	151.4
	Chic., Burl. & Quincy 1954	22,055	22,827	44,882	3.2	54,277	2,632	1,176	29.4	955	48.0	4,661	20.7	113.2
	1953	20,738	23,435	44,173	3.7	55,388	2,819	1,326	31.6	1,129	51.7	5,644	19.7	97.5
	Chic., Rock I. & Pac. 1954	13,494	21,847	35,341	5.1	51,947	2,789	1,097	29.1	1,033	60.0	4,533	18.7	188.8
	1953	12,526	25,840	38,366	3.9	48,923	2,682	1,115	29.9	1,079	58.4	4,982	18.3	193.6
	Denver & R. G. Wn. 1954	8,810	3,885	12,695	4.0	62,716	3,097	1,494	32.3	1,058	44.5	6,265	20.3	79.0
	1953	7,310	5,577	12,887	3.7	61,727	3,354	1,683	33.8	1,275	50.5	7,363	18.4	80.1
	Southern Pacific 1954	32,276	42,184	74,460	2.0	58,338	3,184	1,205	27.1	1,234	75.4	11,646	18.5	122.9
	1953	31,597	46,234	77,831	2.5	53,272	3,048	1,179	26.7	1,206	71.1	11,908	17.7	123.7
	Union Pacific 1954	33,636	30,690	64,326	2.8	77,737	3,018	1,239	27.9	1,399	78.7	9,080	26.0	92.8
	1953	31,004	31,496	62,500	2.4	69,180	2 837	1,244	29.4	1,600	80.1	10,294	24.7	113.4
	Western Pacific 1954	2,966	3,090	6,061	4.1	72,523	2,864	1,320	29.8	1,643	77.1	7,998	25.5	177.3
	1953	2,414	3,476	5,890	6.7	78,635	3,249	1,566	32.0	2,125	91.4	10,729	24.3	170.4
Southwestern Region	International-Gt. Northern* 1954	769	5,685	6,454	2.9	56,657	2,900	1,332	34.1	952	43.2	5,491	19.6	97.1
	1953	783	7,584	8,367	2.6	53,445	2,731	1,263	33.6	788	35.3	6,238	19.7	104.7
	Kansas City Southern 1954	952	5,575	6,527	3.4	83,500	4,069	1,797	30.7	1,153	56.7	8,578	20.6	184.3
	1953	847	6,069	6,916	3.9	74,256	3,826	1,759	33.5	1,383	64.8	10,766	19.5	221.9
	Mo.-Kans.-Texas Lines 1954	5,137	8,223	13,360	6.3	51,302	2,589	1,114	29.2	1,039	57.2	4,043	19.9	144.5
	1953	4,291	7,709	12,000	4.8	48,666	2,452	1,071	28.7	1,209	65.9	4,282	19.9	138.6
	Missouri Pacific* 1954	20,769	19,986	40,755	2.7	60,609	2,930	1,296	30.1	989	49.4	5,835	20.7	87.5
	1953	18,917	19,201	38,118	3.3	55,112	2,632	1,196	30.8	1,291	62.0	6,947	21.0	112.2
	Texas & Pacific 1954	3,365	6,966	10,331	4.8	69,580	3,181	1,126	25.3	1,197	77.3	6,508	21.9	188.5
	1953	2,044	7,951	9,995	3.9	68,748	2,986	1,060	25.1	1,341	86.6	7,070	23.1	218.7
	St. Louis-San Francisco 1954	15,509	10,900	26,409	2.8	45,323	2,471	1,097	29.4	818	41.8	4,727	18.4	162.8
	1953	13,176	13,276	26,452	3.0	43,583	2,608	1,170	30.7	946	47.2	5,261	16.7	122.6
	St. Louis-San. Fran. & Texas 1954	....	445	445	4.7	39,771	2,180	951	31.1	1,364	72.1	4,476	18.2	260.9
	1953	....	672	672	4.5	38,048	2,327	1,057	33.0	1,220	60.1	5,074	16.4	321.9
	St. Louis Southw. Lines 1954	2,489	4,864	7,353	4.2	56,716	2,844	1,271	28.1	1,755	92.0	7,967	20.0	144.5
	1953	2,334	4,523	6,857	1.7	61,351	2,987	1,335	27.9	1,869	96.0	9,089	20.6	135.9
	Texas & New Orleans 1954	6,940	15,348	22,288	1.7	53,569	2,683	1,128	29.5	1,105	60.0	5,801	20.1	124.7
	1953	5,163	16,030	21,193	1.5	48,658	2,488	1,071	29.7	1,300	67.8	6,237	19.8	114.5

*Report of trustee or trustees.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

It began as an experiment—but paid off for everyone concerned. That's why

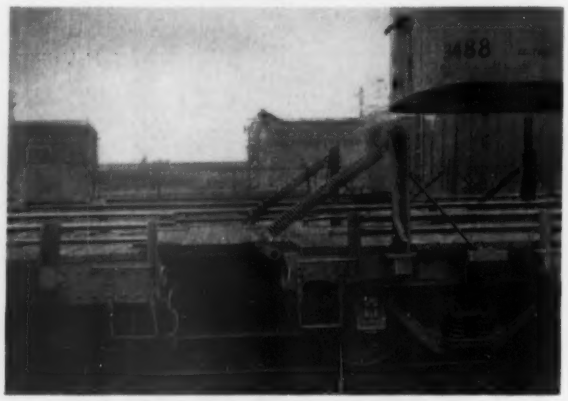
"Trailiner" traffic increases 3200%

Anyone who doubts the future of trailers on flatcars should take a long look at the New Haven's Trailiner service. Starting in 1938—when 1,506 trailers were shipped—it has mushroomed to the point where seven separate Trailiner trains carried 50,255 trailers between New York, Boston, Providence, Springfield and New Haven during 1953.

Dependable schedules are maintained by a fleet of 360 specially designed and constructed flatcars —all mounted on ASF Ride-Control Trucks. Result? Trailer and lading get a safe, smooth ride at almost passenger-train speeds. Using Ride-Control Trucks, experience has shown that if a trailer load rides safely to the New Haven yards, it rides safely on the flatcars.

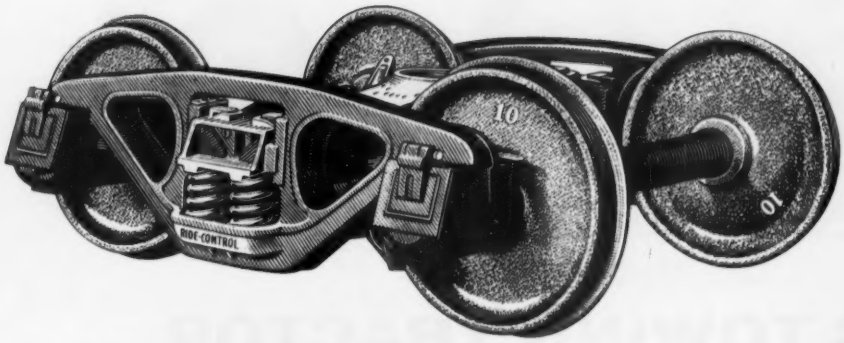
And everybody benefits. The New Haven builds additional revenue. The truckers enjoy relief from highway hazards . . . they get balanced distribution of empties at lowest possible costs . . . and they've doubled the number of trailers used per tractor.

Today, Trailiner service is no longer an innovation. It's an outstanding example of progress . . . with two great transportation methods working together.



Trailiner flatcars receive greater utilization than practically any other freight cars in revenue service. The fleet of Trailiner cars will soon be enlarged with delivery of 100 new cars now on order. These new cars will also run on ASF Ride-Control Trucks—modified for use with roller bearings.

on the New Haven's "Iron Highway"



The "Trailiner" rides on

ASF

ride-control® trucks

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Clark puts the driver where he belongs

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ELECTRIC TOWING TRACTOR

Clark's new electric towing tractor, rated up to 3000 lbs. breakaway drawbar pull, is the first *true* tractor-type electric machine on the market. The driver sits where he belongs—at the rear of the tractor, within arm's reach of the coupler. He does not have to get off the tractor to couple onto a load. He does not have to jockey around to get in position to hook-up, because he can see the coupler from his seat. This means time savings and energy savings (for both driver and batteries).

Another advantage of this basic design is the well balanced distribution of battery weight for both maximum driving and steering traction. Regardless of steep ramps or heavy pulls, there is no "bucking" with the maximum battery weight positioned within the wheelbase. And like Clark electric lift trucks, the new tractor is designed to work a longer cycle without recharging batteries—the maximum in battery efficiency.

- Easy on-and-off access
- Finger-tip direction control
- Rigid box-type frame: **Heavy integral welded plates provide strength for bumping, pushing or pulling.**
- Four speeds forward and reverse
- Four coupler types available
- Straight series wound motor: **develops comparatively large increases in torque with only moderate increase in current draw; 36 to 48 volts; sealed-for-life bearings.**
- Parts interchangeability: **Many components are common to the Clark line of electric lift trucks.**

For details, contact your local Clark dealer, listed under "Trucks, Industrial" in the Yellow Pages. Or write us direct for specifications.

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Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 24, Michigan

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NOW MANY MORE DRY, GRANULAR AND POWDERED MATERIALS CAN BE SHIPPED IN BULK

Shippers using Airslide cars have transported commodities never successfully handled in bulk before

General American's new Airslide car fleet has started operation after months of actual working tests. New cars are coming out of its shops for companies who have actually tested them—found their value. These facts were considered *before* the cars were leased:

1. Airslide car shipping costs less.

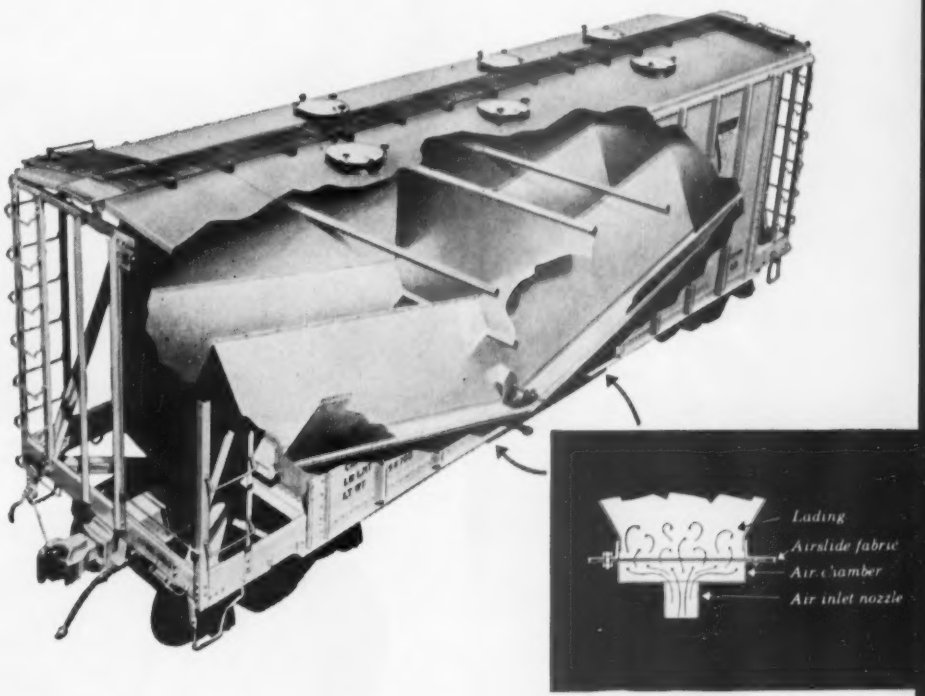
2. High or low density materials can be successfully loaded, carried and unloaded.

3. The expense of individual, small-unit containers can be eliminated.

4. Airslide cars can be loaded by gravity and unloaded into any conveying system.

5. Ladings are protected against shrinkage and leakage with minimum possibility of contamination.

6. General American can service Airslide cars in its own shops throughout the country just as GATX tank cars are serviced.



AIRSLIDE, a trade mark of the Fuller Company, Catasauqua, Pennsylvania

FIND OUT ABOUT CUTTING YOUR SHIPPING COSTS

General American's engineers will work with your traffic and production engineers to see how you can get the advantages and savings of bulk shipping. Write for information.

UNLOAD INTO ANY CONVEYING SYSTEM

The Airslide in car quickly and easily "fluidizes" the lading for complete, speedy unloading. With approximately one pound of air pressure, the lading is aerated and flows quickly and evenly to the discharge points.

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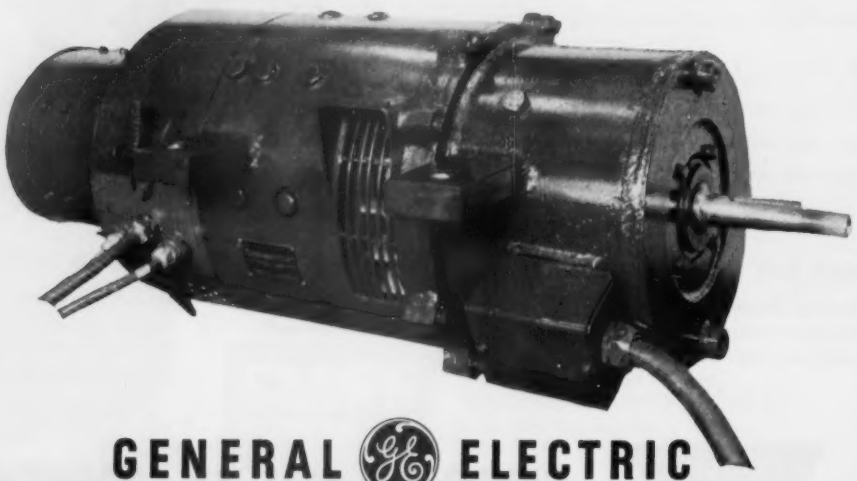
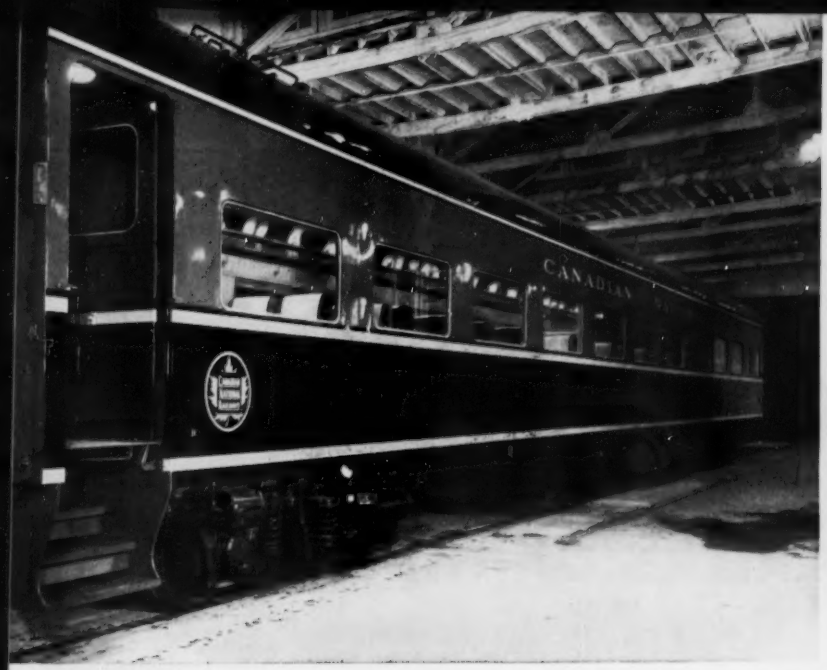
EASILY ACCESSIBLE for periodic inspections, the new **GMG-162** motor-generator system has fewer components to maintain. It has been designed with overall maintenance needs in mind.



GENERAL ELECTRIC



NEW, STREAMLINED passenger cars on the Canadian National Railways will make train travel in Canada more pleasant than ever.

INTERIOR FEATURES include modern lighting, air conditioning, and water coolers.

CANADIAN NATIONAL RAILWAYS

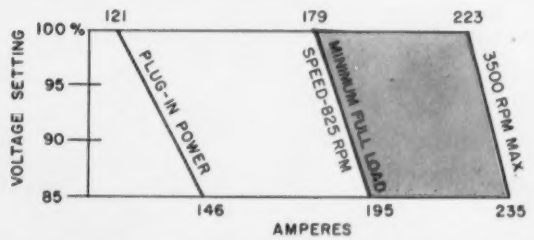
New G-E axle-driven motor-generator offers easier maintenance, high reserve power

SIMPLIFIED SYSTEM INSTALLED ON 100 CANADIAN NATIONAL COACHES

The new coaches on the Canadian National Railways carry the latest lighting, air conditioning, heating, and other passenger comforts. To supply reliable power for this equipment, an improved axle-driven motor-generator system, developed by General Electric, is installed on 100 cars built by Canadian Car & Foundry Co., Ltd.

SIMPLIFIED SYSTEM CUTS COSTS

The keynote of the new system is simplicity. Fewer components means that installation and maintenance are easier, and you have fewer parts to stock. Your overall costs are lower. A special feature is the mounting of the armature on a full-length sleeve so that the shaft can be removed easily without disturbing the a-c rotor, fan, or d-c armature.



HIGH RESERVE POWER is available with the new motor-generator. Chart shows how current limit increases with train speed in 140-volt system. Red area represents extra output.

RELIABILITY IN OPERATION

Like all G-E equipment for railroads, the GMG-162 motor-generator is designed to take the pounding and stress of high-speed operation. Sturdy construction features help you get thousands of hours of outstanding performance.

EFFICIENT OUTPUT AT VARIOUS SPEEDS

The new G-E motor-generator delivers full output over a wide range—from low speeds up to 100-plus mph on the level. This means less drain on your storage batteries. Also, it charges low batteries at a rapid rate. Fewer standby rechargings are needed.

More than 2800 G-E axle-driven motor-generators and 1300 axle-driven generators are in service on Class I railroads. To get fully engineered power supply and distribution for your passenger cars, call in your G-E Apparatus Sales representative. General Electric Co., Sect. 122-14, Schenectady 5, N. Y.

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Phenomenal expansion of Western industry owes much to the great Western network of railroads—vital carriers of raw materials and finished products that serve the rapidly growing economy of our nation. Ever alert to the demands of this great industrial empire . . . leaders of Western railroads have met the challenge by adequately providing modern and efficient transportation.

not only to fill today's requirements; but to anticipate tomorrow's—these are the aims that constantly guide C F & I

OF WESTERN INDUSTRY

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C F & I is proud of its pioneering association with the railroads that serve the West. We share their confidence in the future.

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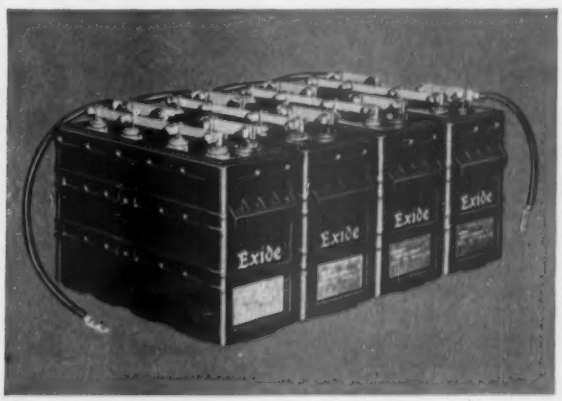
KEEP YOUR PASSENGERS COOL AND HAPPY

. . . with powerful Exide-Ironclad batteries!

PASSENGERS LIKE the comforts of improved coach facilities. Good lighting and air-conditioning create goodwill and repeat business. When dependable Exide-Ironclad batteries are on the job your customers get the traveling comforts you are providing. Exides are built to withstand hard, continuous service. They give worry-free performance and maintain high, uniform voltage throughout long stops. Also, because of lower costs for operation, maintenance and depreciation Exide-Ironclad batteries are your best power buy . . . AT ANY PRICE!

THE POSITIVE PLATES are the heart of any battery. Only Exide uses a slotted tube construction. By use of tubes, more active material is exposed to the electrolyte, providing *greater power*. Also, more active material is retained, *giving longer working life.*



IMPROVED Exide-Ironclads now have power tubes made from *non-oxidizing* plastic for longest battery life. For full details, call your Exide sales engineer—write for Form 5010 (Installation and Maintenance of Car Lighting and Air Conditioning Batteries).

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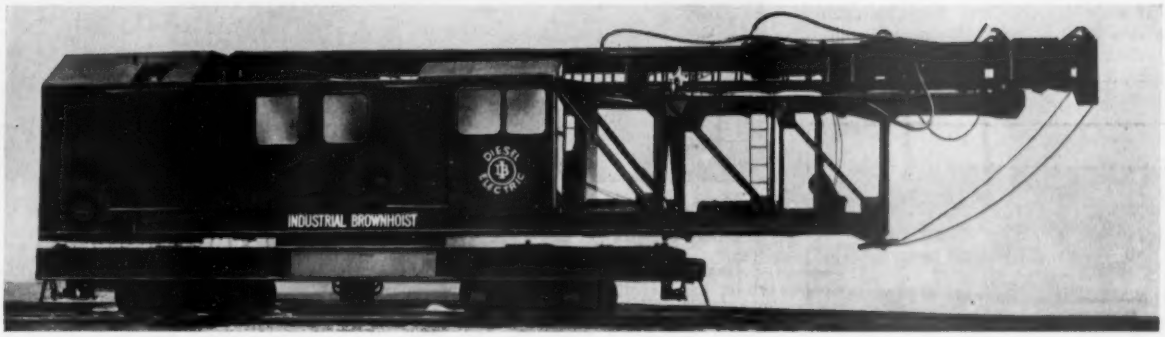
SOCONY-VACUUM OIL COMPANY, INC., Railroad Division, 26 Broadway, New York 4, N.Y.

What's New in Products

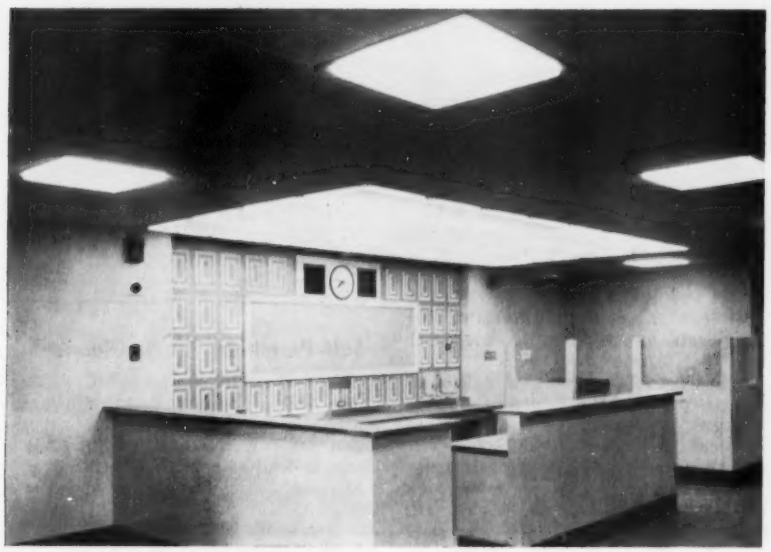


Giant Sized Pile Driver

A pile driver reported to be one of the largest of its type has been announced by Industrial Brownhoist Corporation, Bay City, Mich. Known as No. 15, the machine is a heavy-duty, diesel-electric, full-revolving unit. With power-battering leaders 50 ft long, which will carry a maximum leader load of 26,000 lb, the machine has a reach of 34 ft 1 in. from the center of rotation and 20 ft 6 in. ahead of the front axle. The leaders will provide a maximum batter of 3 in. per ft and, according to the manufacturer, can be raised to driving position or lowered to traveling position in about one minute.

The pile driver, which weighs 211,000 lb in full operating rig, is powered by two diesel engines with a combined horsepower of 385. Each engine drives a General Electric traction generator which, in turn, powers GE travel motors mounted on each of the 6½-in. by 12-in. trucks. Locomotive gear-reduction cases have a built-in disengaging mechanism which can be used when the pile driver is to be transported in a train. The unit has a top travel speed of 20 mph and a maximum drawbar pull of 21,000 lb. It has been designed to haul its own work train and is equipped with air brakes for braking both the driver and the cars it is hauling.

The machine is equipped with a steam-operated pile hammer which is fired by a 115-hp Vapor-Clarkson No. 4630 steam generator with a capacity of 4,000 lb of steam per hour. The unit carries water tanks of 600-gal capacity for supplying the steam generator and a fuel-oil tank of a 275-gal capacity •



Commercial Lighting Fixture

A new lighting fixture designed specially for railroad office buildings, stations and ticket offices has been announced by the Commercial Lighting Division of the Safety Car Heating & Lighting Co., New Haven, Conn. The new fixture includes square and rectangular units of the same basic design, each unit being a multiple of 12-in. ceiling blocks available for individual, or for end-to-end continuous row mounting.

Any desired level of illumination is said to be obtainable with the fixture, which is finished in permanent baked white enamel for maximum light reflection. The fixture housing is heavy-gage die-formed steel and the reflector is designed to permit access to electrical components. Units are available with rapid start, or standard fluorescent lamps •

Filmstrip Projectors

The latest group of filmstrip projectors introduced by Bell & Howell Company, Chicago, includes the above Model 560, a multipurpose unit for larger audiences. This projector can be used in auditoriums and features

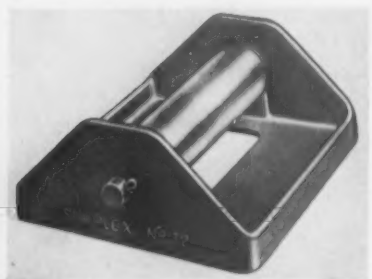
More New Products

"below level" as well as above level tilt—a picture can be projected down from a balcony as well as from the main floor. The "560" will project both single and double frame 35mm filmstrips and 2 by 2 slides. A manual slide changer and interchangeable masks for single and double frame projection are standard equipment. The machine is blower cooled •

Automatic Whiteprinter

A new, fully automatic, high production whiteprinting machine — the "Challenger"—has been announced by the C. F. Pease Company, 3818 N. Rockwell st., Chicago 18. With automatic tracing separation, it is a one-step feed machine, with printer and developer synchronized to a maximum of 40 ft per minute.

Although front and rear print delivery is standard, a front or rear automatic windup device, for continuous yardage operation, is available at a small additional cost •

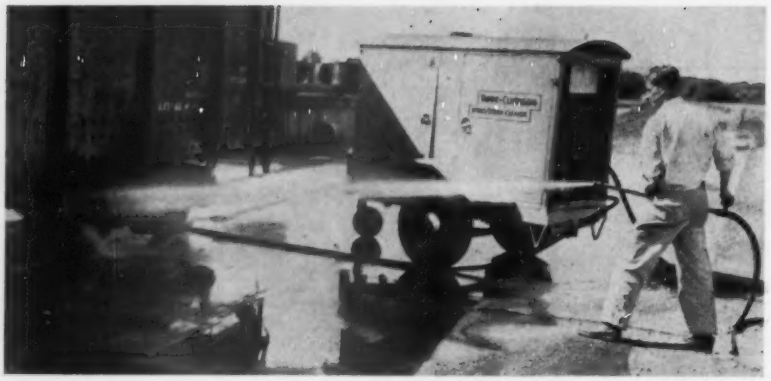


Rail Dolly

The Simplex Model 72 Rail Dolly, designed for use in driving-up expansion in track, installing welded rail and changing switch points, has been announced by Templeton, Kenly & Co., Broadview, Ill. The units are for use in pairs and consist essentially of a roller mounted on a low stand with guides on each side to prevent the rails from slipping off. The stand also has cleats on its base to anchor it firmly as it rests on a tie.

When used for driving rails to eliminate expansion, the device is said to increase safety and cut damage to rail ends because the bumping rail can be more easily controlled. Because friction is greatly reduced, fewer men are required to power the driving rail. A series of the dollies can also be used for placement of long lengths of welded rail.

The unit is reported to be especially useful in adjusting rails in tunnels, on bridges and on main lines where speed is important. The manufacturer recommends the use of the dollies in conjunction with Simplex Rail Expanders. As a rail is bumped, the expander is tightened, thereby preventing the bumped rail from slipping back. The dolly weighs 16 lb and has overall dimensions of 8 in. by 8½ in. by 3⅝ in. in height. The roller is 2 in. in diameter and 7½ in. long •



New Box-Car Cleaning Unit

The Vapor Heating Corporation, Chicago, has developed a portable hydrosteam cleaning unit, Model 4989-G, which can eject 1,200 gal per hour of hot water at 240 psi, or enough to clean out the dirtiest freight cars quickly and thoroughly. A Vapor-Clarkson 40-hp steam generator in the unit develops 120-lb working steam pressure in 2 minutes from cold water and over 1,100 lb of steam per hour which is directed through a Sellers injector where the steam heats the water and the pressure is increased by a venturi in the injector.

The unit is mounted on a two-wheel trailer, enclosed in a trim metal cabinet with large doors so the operator can easily reach all controls. Fuel tanks for eight hours of operation and a float-control water supply tank are incorporated in the cabinet. High pressure steam hoses and a cleaning gun are included with the unit.

Automatic controls on the steam generator cause the machine to make steam only when the cleaning gun is turned on; the steam generator automatically cycles on and off to hold the working steam pressure.

A 4½-hp gasoline engine drives the feed water pump, blower, fuel pump and magneto for constant ignition, or a 2-hp electric motor may be used. Hot gases from the forced-draft fuel-oil fire in the steam generator wipe over the patented steel coils and efficiently turn the water pumped through the coils into steam. Steam pressures can be changed from 75 to 290 lb by adjusting one control. The steam generator consumes fuel oil at the rate of 9 gal per hr when running continuously.

This hydrosteam cleaning unit is equipped to do effective cleaning in three ways: by jetting out 180-deg water under 240-lb pressure; by jetting hot water under pressure mixed with a cleaning detergent; and steam cleaning with or without detergents. One of these methods will generally remove the most obstinate dirt and clean railroad box and refrigerator cars between shipments sufficiently to permit upgrading the cars for higher commodity loading and thus increase railroad freight revenue •

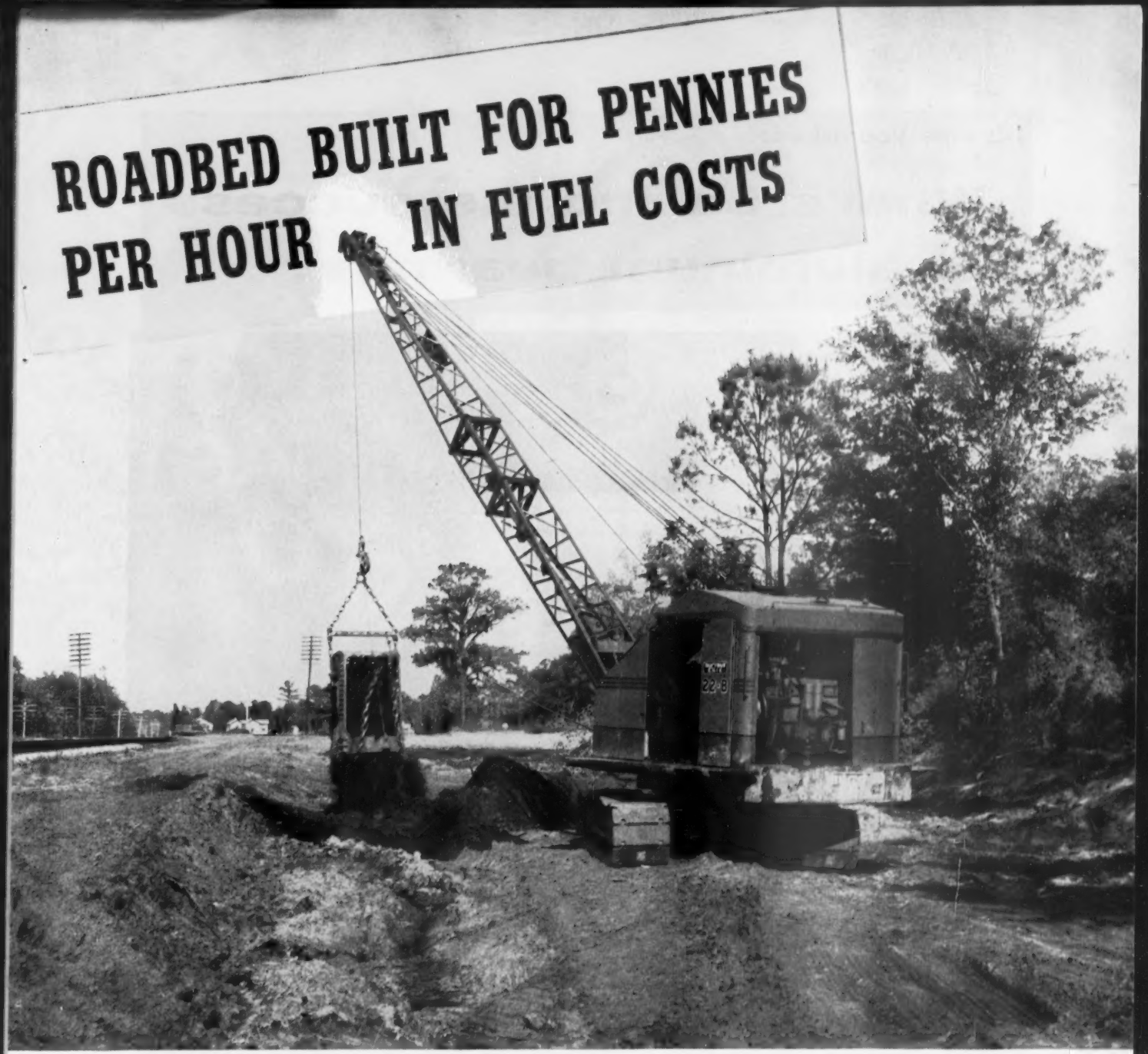
Self-Propelled Track Cleaner

An off-track self-propelled loader, the "125 Hiloader Track Cleaner," produced by Athey Products Corporation, 5631 W. 65th st., Chicago 38, is said to load as much as 10 cubic yards of loose debris from track areas each minute.

Operated by only one man, the loader is not tied to the rails and can take on additional jobs. Coal, stone and other materials can be loaded from stockpiles, and snow can be cleared at the rate of 25 cubic yards a minute. A 15-ft discharge conveyor swivels 55 deg to either side to cast material into trucks or hopper and gondola cars.

Power is provided by a 125-hp engine •

ROADBED BUILT FOR PENNIES PER HOUR IN FUEL COSTS



THIS Bucyrus-Erie Shovel is building profits as well as roadbed for the Atlantic Coast Line Railroad. A money-saving Cat* D318 Diesel Engine is powering its ¾-yard bucket.

Like all dependable Caterpillar Diesels, the D318 operates on inexpensive No. 2 furnace oil, and uses it sparingly. Fuel cost is measured in pennies!

But Caterpillar Diesel Engines pay off in more than fuel economy. Their high availability and long life add up to big dollar savings. Costs drop if equipment is ready for work when your men are—and that's the type of availability you can count on from Caterpillar off- and on-track equipment.

In addition, you can get genuine Cat parts within a matter of hours from your nearby Caterpillar Dealer. He will go anywhere, at any time. He always keeps parts in stock for your equipment. And no matter how old your Caterpillar equipment may be, it never becomes an orphan. Parts are available—*always.*

So cut down your parts inventory problem the next time you order new equipment or the next time you repower. Specify Caterpillar power. Leading manufacturers of railroad and construction equipment can supply it.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

SPECIFY CAT POWER FOR HIGH-PROFIT PERFORMANCE

It's time you asked:

What's behind the success of aluminum bearings?

Since Alcoa first introduced them in 1938, aluminum bearings have been making deep inroads where bimetallic bearings were considered standard. Little by little, management groups in all industries have seen competitors' problems solved by the adoption of them—and hundreds have asked, "What IS behind the success of aluminum bearings?"

For one thing, aluminum bearings are *one piece.* Heat is evenly distributed, quickly dissipated. The relative softness of aluminum bearing materials prevents scoring of shafts by dirt particles. Yet aluminum is hard enough to groove slightly, and "roll out" particles, and allow them to be trapped by the oil filter. What's more, these long-lasting bearings in many cases actually *cost less than the bearings you're now using!*

Alcoa's team of research and development engineers spent years in the development of this special bearing alloy. These men, already familiar with the railroad industry, knew the alloy must have optimum resistance to corrosion; must offer the last word in load-carrying ability.

Working hand-in-hand with Fairbanks-Morse, these Alcoa engineers developed, machined and installed the world's first aluminum bearings for diesel locomotives. Now, after years of trouble-free experience with them, Fairbanks-Morse specifies Alcoa® Aluminum Bearings for the full engine set in their great new TRAIN MASTER Locomotive!

So, it's time you asked, "What's behind the success of aluminum bearings?"—and the man to ask is the Alcoa sales engineer, or call your nearby Alcoa sales office. The number is listed under "Aluminum" in the classified section of your telephone directory. Or write: ALUMINUM COMPANY OF AMERICA, 1988-J Alcoa Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

STOP RISING MAINTENANCE-OF-WAY COSTS WITH

AMCRECO

Here is a simple, effective formula for cutting your rising maintenance-of-way costs—*Cut costs by reducing the amount of maintenance needed—Reduce the amount of maintenance needed by using products that stand up longer and give extra years of maintenance-free service.* Amcreco cross ties, bridge timbers, poles and plank—pressure treated with creosote—fit this formula for cutting maintenance costs.

Take advantage of our nearly half-a-century of experience in treating and processing wood for the railroad industry. Any of our nearby sales offices will be glad to discuss your needs with you.

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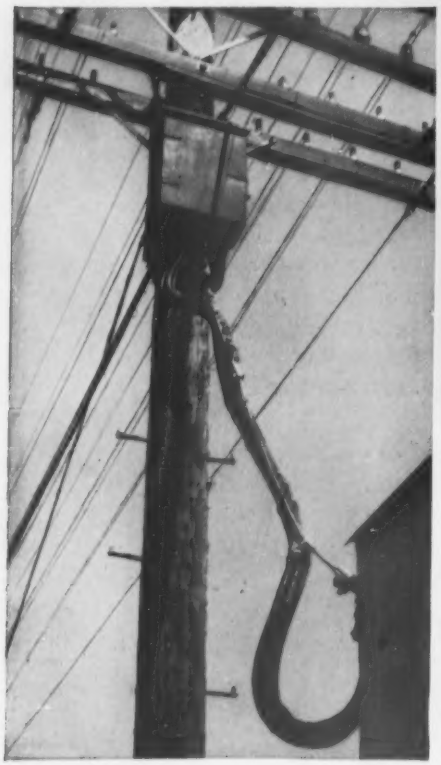
16 FIELD SALES OFFICES TO SERVE YOU

CROSS TIES • TIMBERS • POLES • PLANK

On the Feather River Route of the Western Pacific.

These Okonite-Okoprene Signal Cables installed on Western Pacific right-of-way are continuously exposed to weather extremes.



WESTERN PACIFIC selects OKONITE SIGNAL CABLES for all-weather dependability

The Western Pacific Railroad, in company with over 100 Class I railroads, relies on Okonite-Okoprene cables for dependable, all-weather service on their signal systems. On the San Francisco-Stockton Division, Western Pacific uses Okonite-Okoprene multiple conductor signal cables as laterals from track to signals. This is another example of the vital jobs capably handled by Okonite cables in railroad service.

Okonite insulation, made of natural Up-River Fine Para Rubber, has proved itself in service for over 75 years. It is always vulcanized in a continuous metal mold to assure a uniform cure. Perfect centering of the conductor is assured by the strip-insulating process. Okoprene, an exclusive Okonite neoprene formulation, protects the cable against weather extremes, alkalies, moisture and acids, as well as mechanical damage and most oils.

Okonite cables have proved themselves in service under the most difficult operating conditions for every important railroad use. Write for Bulletin RA 1078 for information on Okonite cables for railroad use to The Okonite Company, Passaic, N. J.

OKONITE insulated cables

2628

How Best Avoid Government Ownership?

On at least one question all railroad men are in agreement—none of them wants government ownership and operation of railroads. It follows that none of them wants to take any action likely to invite such an eventuality. In the meantime, many railroads find it necessary to continue the operation of services which incur substantial losses—losses which, if unchecked, constitute in themselves the most active and dangerous of all threats of socialization. That is to say—there is no situation which so certainly invites government ownership as one in which a company offering an indispensable service finds itself unable to pay necessary expenses from available revenues.

But, in their praiseworthy dislike for government ownership or anything resembling it, need railroad people experience any qualms in accepting compensation from government, federal or local, which constitutes no more than reasonable indemnification of railroad owners for palpable injury done them by government action? Any fair appraisal of the total amount of such injury would come to a figure of many billions. Such injury includes a deliberate prohibition by government of an opportunity for railroad owners to earn a return equal to that of owners of other industries. It embraces the obligation placed on the railroads to provide "stand-by" facilities and equipment for national defense and to continue unprofitable services. It includes the high-handed way in which, as a purchaser of transportation, the government has been dealing with the railroads (e.g., the diversion from the rails of mail tonnage under a system of charging that does not permit the railroads to hold on to the tonnage for which they have an obvious "inherent advantage"). It includes the damage done to railroad values by deliberate government action to enable less economical agencies to divert traffic away from the railroads (e.g., the New York State Barge Canal).

The danger in getting indemnified for such injury lies, not in compromise with principles of private enterprise, but in the possibility that compensation might come with strings attached which would further restrict the freedom of railroad owners to operate their own property. If this danger could be surmounted, there would be an obvious advantage—to the government and the public as well as the railroads—in that such indemnification would greatly strengthen the railroads' credit, providing them with the means to improve their plant, equipment and service. As far as contributing to improvement in general business is concerned, a billion dollars expended to revive railroad credit and expenditures would do the work of $20 billion spent in direct "public works."

Practical guidance in one aspect of this thorny line of inquiry may be found in conclusions reached by Ralph Budd, former president of the Burlington, after five distinguished years as chairman of the Chicago Transit Authority. On retiring from this latter office at his own request several months ago, Mr. Budd wrote the mayor a prescription for big-city transit which faces frankly the conclusion that the community has financial responsibility for mass public transportation. Nowhere in Mr. Budd's letter did he address himself to suburban services rendered by privately owned railroads. Nevertheless, it is not improper to note in his prescription for publicly owned local transit in Chicago those concepts which offer logical parallels with railroad commuter service.

The retiring CTA head raised the question whether the Authority can go on providing a necessary social service under the present terms, whereby auto riders benefit from ever growing improvements out of public funds, while bus and train riders must support directly, from fares, not only their present costs, but the costs of past and future improvements. He showed that the rapid transit lines actually represent "a very costly grade separation project" and concluded that: "Consideration should be given to a plan whereby the riders of CTA will be relieved of some of the cost of operating this citywide grade separation, mainly for the benefit of private automobile users on the streets."

Back in 1945, President Fred G. Gurley of the Santa Fe expressed himself in an address as completely opposed to "anything which even approaches putting the government in the railroad business." However, he added, if the practice of putting government money into other transportation continues, then he believed it would be fair for the government to allow the railroads tax credits for roadway improvements.

Since there is no let-up in government expenditures for the benefit of agencies of transportation other than railroads, we believe the possibilities of getting a greater measure of equality for the railroads along the lines suggested by Messrs. Budd and Gurley ought to be explored.

These Walls Were Bulging, So—

To get more capacity and efficiency from this Chicago freighthouse the Erie switched to mechanized operation

ON THE MAIN FLOOR, 80-truck capacity Towveyor moves freight from cars to various "zone areas" in the terminal at a speed of 120 ft per min. The zone destinations are chalked on the small metal plates.

FREIGHT IS SOMETIMES UNLOADED in the zones, but if volume permits it is left on the four-wheel trucks to avoid rehandling. The Erie purchased 800 house trucks for this operation; it already had 200.

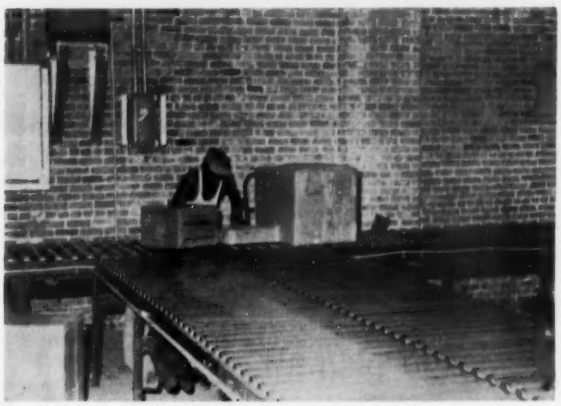
Installation of mechanized equipment in the inbound house, and a plan of operation that makes the most of such equipment, has actually added new capacity to the Erie's 14th Street freight terminal in Chicago. New lighting has reclaimed some unused basement space, but the real gains have been on the first and second floors. There the road has installed a Towveyor system, a Lamson roller conveyor system, new lighting and a five master-station intercommunication system. One of three existing elevators was replaced and a fourth one added. Also new: A brick connecting house and center platform, giving the entire freighthouse a "W" shape.

By these changes the road is improving service for its customers. The entire freighthouse operation is more efficient. During the first two months of operation there was realized a substantial reduction in time between unloading freight cars and loading highway vehicles. Fewer shipments are "Can't Locate," "Over," and "Short." Likelihood of concealed damage is less because of reduced handling. Both the railroad and its employees are benefiting because jobs are easier and safer and because labor turnover is lessened. The mechanized sorting of small shipments has been found to be a great improvement over the old system of manual sorting.

Before the new equipment was placed in operation last May, the Erie conducted training classes for about 20 key employees of the terminal. These extended over a two-month period. Among other things, 15 men memorized a new alaphabetical sorting guide which lists zone numbers for the Chicago delivery area.

MISCELLANEOUS FREIGHT, called "soup," moves by Towveyor to the south end of the freighthouse where it is removed and placed on the 32-ft power conveyor loading table. Destination: upstairs, via the elevating conveyor.

MARKERS at the head of the elevating conveyor on the second floor check addresses and chalk on proper zone numbers as the packages start along the 157-ft powered assort conveyor.



ALONG THE ASSORT CONVEYOR on the second floor are seven gravity conveyor "fingers." Pushers, at each "finger," sort freight by the marker's zone numbers—pushing the packages onto assigned gravity conveyors.

LOADED HOUSE TRUCKS move from the "fingers" to designated zone areas on the second floor. Yale work-savers, called "walkies," are used since there is no Towveyor on this floor.

UPSTAIRS, the freight is stacked in neat piles in the zone areas, ready for the delivery clerks. As on the first floor, 72-in. fluorescent lamps were coupled with 500-watt incandescents for overhead lighting.

THE BASEMENT was reclaimed and is now used principally for freight destined beyond Chicago. Such freight comes down by elevator, in house trucks, direct from inbound cars to be assembled in destination zones.

READY TO GO, house trailers from the basement are moved by elevators to the first floor, and thence by Mercury gas tractors to the loading platform. The station has four elevators, including one completely new one.

A FIVE-MASTER-STATION INTERCOM system, by Webster, is a time and step saver. A separate intercom setup, using two Webster Teletalks, connects the second-floor markers with first-floor loaders at the conveyor table.

E. H. HALLMANN—"It is vital to the present and future welfare of the railroad industry that we make the most of this valuable asset (railroad employees)."

R. P. HART—"Is it possible to arrange for a higher percentage of man-hours to be spent on the job at productive work?"

What's Ahead for Supervisors?

Management Tells Roadmasters and B&B men to plan for . . .

- Careful cost control
- Greater efficiency
- Better employee relations
- H-bomb attack

The responsibilities of supervisory officers in the maintenance-of-way and structures departments are heavier now than ever before, and are destined to grow even heavier in the future. These thoughts were expressed or implied time and again in addresses of top-ranking railway officers at the conventions of the Roadmasters' and Maintenance of Way Association and the American Railway Bridge & Building Association, held at the Conrad Hilton hotel, Chicago, last week.

In line with customary practice, these conventions were held concurrently but separately, except that on two occasions the groups were brought together to hear addresses of mutual interest. The separate sessions were devoted largely to the consideration and discussion of technical committee reports on timely subjects. The joint sessions were given over almost entirely to addresses on subjects having to do more with the broader questions facing maintenance-of-way supervisors.

CAREFUL COST CONTROL

"In the light of reduced income, keener competition and . . . increased costs for labor and materials, supervisors must now be more alert than ever before to adopt refinements that will effect still greater economies in the maintenance of our railway facilities." So spoke R. P. Hart, chief operating officer of the Missouri Pacific lines, after citing figures to show how the efforts of supervisory personnel in the maintenance-of-way department have already produced substantial savings. He pointed out, for example, that, while wages have gone up 2¼ to 2½ times in the last 10 years, total expenditures for maintenance-of-way and structures have increased only about 25 per cent.

To secure the best results from mechanical aids now being used in maintenance-of-way work, "you must observe their operations closely to be sure you are getting full efficiency from them," declared Mr. Hart. In addition, supervisors were urged to study their equipment personnally and "become intimately acquainted with it" in order to "get the best results from its operation." Neglect can be very expensive "if you have a number of men standing idle for even a short time at present-day rates of pay."

Trouble with equipment is not the only cause of lost man-hours, observed Mr. Hart. "Proper organization of forces and correct distribution of manpower is essential to the fullest and most efficient use of labor. Only by close observation of your crew in action can you tell whether each workman is consistently performing, hour after hour, a reasonable amount of effective work."

He also made the point that foremen look to the supervisor for direction. "Their operations are hindered, or perhaps stopped, if you fail to keep them supplied with proper materials or neglect to provide them needed instructions or plans. Your failure brings indecision to them, and any indecision on their part means lost man-hours and wasted maintenance or construction funds."

"Progress must not stop," Mr. Hart remarked. "Wages and material costs may go still higher." He urged that

G. W. MILLER (left) extended greetings from the American Railway Engineering Association. At center, LEE MAYFIELD, president of the American Railway Bridge & Building Association; at right, H. W. KELLOGG, president, Roadmasters' and Maintenance of Way Association of America.

more efficient ways be found to do things, that improvements be made in machines to render them more effective, that more productive man-hours be obtained out of the working day, and that better materials be found.

GREATER EFFICIENCY

A somewhat similar line of thought was developed in an address by M. I. Dunn, vice president-construction and maintenance, Chesapeake & Ohio, who spoke on "Immediate and Long Range Future of Maintenance of Way." Mr. Dunn is of the opinion that "the railways will continue to dominate the freight transportation field during the foreseeable future," but that railway passenger train mileage "will no doubt continue to shrink." For this reason he expects that, as time goes on, "the roadmaster will have less concern with the buttons and bows that go with maintenance of track for the few passenger trains now operated by the average road. He will be more concerned with the safe maintenance of track for high-speed freight trains because we cannot compete for the most desirable freight traffic unless we give fast, dependable and damage-free service.

"In view of mounting costs and shrinking budgets, this future maintenance for high-speed freight service may seem in the order of a herculean task," said Mr. Dunn. Its accomplishment, he said, will be facilitated by "three tried tools," namely, mechanization, gang maintenance and programming.

To develop the importance of mechanization Mr. Dunn presented figures to show that "a track laborer receives about the same wage today for two hours' work as he did for eight hours in 1936." These accelerated wage increases, he said, are the primary reason for the development and adoption of mechanization. "To state it very simply, many small groups of a few men, each working with hand tools at the prevailing high wages, each small group with a foreman, cannot produce work as economically as a unit consisting of labor-saving machinery with foreman and men trained to operate the machines. We cannot afford to pay out most of our maintenance money for section labor where the proportion, dollarwise, for foreman supervision is very high."

Mr. Dunn declared that a program has to be formulated and followed. "Under programming, a supervisor does not have to divide his time between 15 to 20 foremen in order to cover the work being done on his district. He must devote the majority of his supervision to the one or two program gangs on his district which perform practically all of his production work." One by-product of programming, he said, is reduced motor-car movements and, most importantly, a smaller number of locations where delays to trains may occur.

Explaining the type of programming he had in mind, Mr. Dunn said that "the goal to set is to have a program each year which, if carried out, will result in the work being done that is necessary for the state of maintenance that the management desires, to translate this to man-hours and to see that the man-hours are authorized and expended in such a manner as to result in the accomplishment of the program."

Mr. Dunn sees this kind of programming as something new. "We are no longer firemen rushing from point to point just ahead of trouble. The millions of dollars that have been put into the railroads have, I hope, brought us to a point where, please heaven, we shall never have to go back to that situation."

BETTER EMPLOYEE RELATIONS

Still another area in which the responsibilities of supervisors are increasing is in the direction of promoting the loyalty and unity of railroad employees, according to E. H. Hallmann, director of personnel of the Illinois Central. "Just as a building or bridge depends on its foundation for stability and strength, a railroad must depend on the unity, efficiency and loyalty of its employees to win and hold public good will," he said.

Its employees are a railroad's greatest asset, Mr. Hallmann declared. The preservation of this asset is "vital to the present and future welfare of the railroad industry." To do this, he said, we must accomplish three things: "First, we must be more selective in hiring new employees; second, we must do a thorough job of in-

M. S. WESTLUND, Electric Tamper & Equipment Co.; R. H. Beeder, assistant chief engineer, Santa Fe system.

R. M. SMITH, district engineer, Missouri Pacific; E. L. Anderson, chief engineer, Frisco; W. H. Hobbs, chief engineer system, MP.

doctrinating and training new employees; and third, we must identify the better-than-average employees . . . and help them achieve what their abilities promise."

In putting the first of these three essentials into effect, "the importance of careful hiring cannot be overemphasized," said Mr. Hallmann. "If we are going to build strong railroads for the future, we must have high-quality personnel; we must do everything consistent to keep troublemakers and incompetents out of our service. . . . We must set up employment procedures that will help identify applicants who give promise of meeting certain specifications."

Mr. Hallmann emphasized the importance of keeping employees informed on the things they want to know about. This hunger for information is perfectly natural, he said. The average employee spends more hours on the job and with his fellow employees and supervisors than he does with his family, neighbors, union leaders or any other group. "His job means a lot to him. He wants all the information about it he can get. Management must either share information with the employee, or the employee will fall back on the grapevine and accept biased rumors and heresay."

In putting the third essential into effect, Mr. Hallmann said it was important to look for certain qualities in the employee who aspires to be a supervisor. For one thing, he said, "he must have some creative imagination. He requires initiative. He has to be able to assume responsibility rather than being a buck passer. He is going to make some mistakes, of course, but if he has good, old-fashioned common sense it will go a long way toward making up for a few mistakes."

H-BOMB ATTACK

The fourth speaker at the joint sessions was C. P. Fisher, general manager of the Chicago Union Station Company, who gave his listeners a chill by a description of what is likely to occur in the event of an H-bomb attack and by outlining the responsibilities that would face maintenance-of-way supervisory officers in such an eventuality. Mr. Fisher spoke in his capacity as operating officer, Northern Region, Railroad Section, Illinois Civil Defense Agency. His talk was illustrated by moving pictures.

H-bombs, he said, are 1,000 times as powerful as the A-bombs used on Nagasaki and Hiroshima in Japan, and the area of blast is 10 times that of the smaller bomb. The total area of damage may exceed 1,250 square miles.

The responsibility for determining the extent of the damage to railroad facilities will be placed on the men in charge of maintenance of the tracks and structures. Then decisions must be made as to the areas which can be repaired quickly to return the important lines and facilities to service.

Mr. Fisher told how the railroads serving Chicago have been integrated into plans for coping with an H-bomb attack. As soon as the bombed areas can be surveyed, track forces will begin to inspect tracks in main lines and yards, while bridge and building forces will check viaducts and bridges, and signal forces will begin ascertaining the damage sustained by signal and communications systems.

Various units of work equipment will be assigned as needed to clean up bridges or viaducts, buildings or other obstructions that may have toppled onto essential trackage. He does not anticipate that there will be any "insurmountable situations for us even in the face of this new horror. With our plan and organization the railroads of Chicago are well prepared to carry on."

OFFICERS ELECTED BY THE ASSOCIATIONS

In the election of officers in the Roadmasters' Association, R. G. Simmons, general roadmaster of the Milwaukee at Chicago, was advanced from first vice-president to president; W. M. S. Dunn, general roadmaster, Nickel Plate, Bellevue, Ohio, from second vice-president to first vice-president; and J. E. Griffith, assistant chief engineer maintenance of way and structures, Southern, Knoxville, Tenn., was elected second vice-president. New directors are G. W. Neal, superintendent, Chattahoochee Valley, West Point, Ga., and D. C. Hastings, division engineer, Richmond, Fredericksburg & Potomac, Richmond, Va. E. E. Crowley, division engineer, Delaware & Hudson, Albany, N. Y., was re-elected treasurer.

In the Bridge & Building Association, H. M. Harlow, assistant general supervisor, bridges and buildings, Chesapeake & Ohio, Richmond, Va., was advanced from first vice-president to president; J. A. Jorlett, assistant engineer bridges and buildings, Pennsylvania, New York, from second vice-president to first vice-president; R. R. Gunderson, bridge and structural engineer, Western Maryland, Baltimore, from third vice-president to second vice-president; W. H. Huffman, assistant engineer maintenance, Chicago & North Western, Chicago, from fourth vice-president to third vice-president; and M. H. Dick, western editor, *Railway Age*, Chicago, was elected fourth vice-president. Directors elected were J. F. Warrenfells, (re-elected), assistant division engineer, Seaboard Air Line, Raleigh, N. C.; H. D. Curie, master carpenter, Baltimore & Ohio, Garrett, Ind.; and J. M. Lowry, chief engineer, St. Louis Southwestern, Tyler, Tex. L. C. Winkelhaus, assistant structural engineer, C&NW, Chicago, was reelected treasurer.

How to Improve Freight Operation

Faster overall freight train movement can be attained by spending more rather than less time on yard inspection

Making a train up quickly, dropping off some loaded cars if necessary to avoid exceeding allowable air leakage and brake-pipe gradient, then rushing this train off on an unpredictable journey—this procedure is hardly a positive approach to providing fast economical freight service.

It is unreasonable to assume that a freight train can be moved from origin to destination as quickly as possible if inspection time is cut to the point where an adequate check cannot be made of the train equipment before departure. This practice results too often in delay to the train concerned and to other revenue trains in the vicinity—as well as in possible damage to lading.

These were among the conclusions reached in an investigation conducted by the St. Louis Air Brake Club for a report that was to have been presented at this year's cancelled meeting of the Air Brake Association. The investigation analyzed 228 delays on several railroads over a two-month period. Its purpose was to study delays en route and ways to eliminate the causes. The study showed that delays en route are more costly than delays in terminals and that the great majority of the former can be prevented.

A check was made of nine of the 228 delays picked at random to determine how much interference resulted to trains other than the one on which the breakdown occurred. The nine cases picked resulted in total delay of 13 hours for the trains directly affected, while five other trains were delayed a total of nine additional hours. If each of the nine trains on which the delay occurred had been permitted an extra hour in the terminal for adequate maintenance of the air-brake equipment these fourteen trains, representing a 22-hour delay, could probably have reached their destination much sooner. If more thorough inspection would have eliminated all delays, 22 hours would have been saved with an expenditure of only the nine extra inspection hours, reducing the losses in time, man-hours, cost of equipment and possible lading damage.

If the ratio of nine hours indirect for every 13 hours of direct delay held approximately true for all the 228 instances, the total delay time to all trains concerned would have been at least 200 hours. With each train having a 5-man crew, this is a loss of 1,000 man-hours—some of it at overtime rates. This is of course in addition to the loss in equipment availability, possible damaged lading and repairs.

WHAT ST. LOUIS BRAKE CLUB TESTS SHOWED

CAUSES FOR THE TRAIN DELAYS EN ROUTE AND THE TIME LOST

Delays due to:	Number total delays	Delay time Hr	Min	Average time delays Hr	Min
1. Burst air hose	25	12	56	0	31
2. Air leaks or broken pipes	25	15	41	0	38
3. Undesired emergency	28	10	7	0	22
4. Broken knuckles	26	19	28	0	45
5. Drawbar failures	2	3	30	1	45
6. Break-in-twos	27	12	11	0	27
7. Stuck brakes	56	21	45	0	23
8. Coupler failures	31	37	42	1	13
9. Miscellaneous	8	4	40	0	35
Total	228	138	0		

Present Inspection Inadequate

In a single freight car there are 55 places where air leakage can occur—17 in the AB valve and 38 in the remainder of the system. Leakage in the portion of the system other than the brake pipe cannot be de-

COMMON MISTAKES IN MAKING YARD AIR LEAKAGE TEST

1. Wearing ear muffs while walking the train in cold weather to listen for audible leaks.
2. Walking the train at a distance while another train is moving so near or so fast that audible leaks cannot be heard.
3. Inspecting brake-pipe leakage after a heavy brake-pipe reduction has reduced the audibility of leaks due to the lower brake-pipe pressure.
4. Inspecting car brakes with the yard pressure too low. The yard pressure must be at least as much as is in the brake pipe after the standard 15-lb reduction has been made. This lower pressure might reduce a leak to where it would pass the yard test; yet at the higher road pressure the leak would exceed the limits.
5. Failure to walk the train and detect audible leaks after an emergency application has been initiated from a fully charged train to reveal major system leaks that might not otherwise be detected.
6. Failure to provide tools for tightening nuts and bolts found to be loose.
7. Incomplete inspection and servicing from fear of working on a train which lacks blue flag protection.

tected by present tests because that portion of the system is cut off from the brake pipe when the brakes are applied during the brakepipe leakage test.

When excessive leakage exists in some parts of the air-brake system on one car the brakes may fail to release and result in a costly delay to replace burned out shoes, a broken knuckle or a pulled drawbar. Best practice requires that leakage in the AB valve or reservoirs, especially, should be corrected immediately. Since this valve controls the brake system it should be in condition at all times to respond to the will of the engineman and not to the effects of undesirable leakage.

Among recent developments to aid in combating leakage is the brake-pipe flow indicator which tells the enginemen if enough leakage develops en route to warrant correction. It also indicates such things as applications initiated by the conductor from the caboose so that the engineman can take action to prevent a break-in-two.

A brake-system leakage-testing device measures the total system leakage in a cut of cars when the train brakes are released and charged, supplementing the single-car testing device which registers only brake-pipe leakage on a single car. As this system device tests on a charged basis, it indicates auxiliary-reservoir as well as brake-pipe leakage, both of which can be corrected promptly and eliminated in the cut of cars prior to the terminal tests. Application and release tests can also be made with this device after the train is made up so that when the road locomotive and crew arrive a great majority of the leaks will have been corrected and the train will be ready to pass the terminal test and depart.

Another important consideration in reducing delays is the yard charging plant to precharge trains with clean and dry compressed air. Good yard charging-plant installations result in improved train handling when the cars are placed in trains, and will allow the inspection forces time to eliminate leaks before train tests are made.

Gas-Turbine Operation Extended

The Union Pacific is now operating gas turbine-electric locomotives east from Green River, Wyo., to Laramie, as well as west to Ogden, Utah. At an early date, it is planned to continue their service farther east to Cheyenne. They are pooled with other power, and are shown no favoritism. In fact, they are given all the duty that traffic will permit.

The present demand of traffic is for higher train speeds with proportionately reduced train lengths, and freight-train speeds are now higher than passenger train speeds were 20 or 30 years ago.

All of the 25 gas-turbine units will be in service by the latter part of this year. The fuel being used at present is somewhat lighter than Bunker C, and fuel costs per gross ton-mile are now no greater than for diesel locomotives. No difficulty is being experienced in handling the lighter oil.

All units are hostled in the yards with power from the auxiliary diesel engine, and the turbine is shut down if the locomotive is to be idle more than half an hour.

On the newer units, of which there are now nine in service, the turbines are shut down on long descending grades and excitation for the motors which then act as generators for dynamic braking is obtained from the auxiliary power plant.

Minor improvements are constantly being made. Troubles with the turbines have been practically eliminated and are now confined to minor equipment and accessories.

Combustion chamber life has been extended, and progress in this direction is being continued. This involves improved design and materials with resultant better use of fuel and elimination of hot spots in combustion chambers and turbine.

The use of a special inspection instrument called a Boroscope, developed by the General Electric Company, has been particularly effective. It permits inspection of all interior surfaces of combustion chambers through a small hole in the side of each of the six. It has greatly reduced the likelihood of tear-down of chambers before such an operation has become necessary. It also shows whether the work of assembly is good after it is completed. Experience indicates that the life of combustion-chamber liners will be extended from 400 to 1,200 to 1,500 hours.

Major gas-turbine maintenance work is done at Green River, under the supervision of a four-man gas-turbine staff, consisting of B. V. Johnson, R. E. Prince, L. F. Zieler and R. C. Hill.

MAKING HIS PLEA for "selective consolidations," Katy President Fraser said railroad management has been "too prone to pass off . . . problems of neighboring lines."

RAILWAY AGE'S SCHMIDT diagnosed ills which caused railroads to fail this test: "If your gross isn't three times what it was before the war, you're not in business."

Cost-Cutting Mergers Advocated

President Fraser of Katy proposed "selective" consolidations in address to AAR Treasury Division—*Railway Age's* Schmidt called for new pricing and government policies recognizing economic and political facts of life

Selective consolidation of strong and weak neighboring railroads is favored by Donald V. Fraser, president of the Missouri-Kansas-Texas, as a means of solving what he calls the industry's "formidable problem" of costs.

Mr. Fraser made this proposal in an address at the annual meeting of the AAR Treasury Division, which was held at the Greenbrier, White Sulphur Springs, W. Va., from September 6 to 9, inclusive. He emphasized that he was not advocating an overall consolidation plan: he means only mergers which will result in "obvious advantages to all parties," and which "prove to be in the public interest."

The Katy president was followed on the meeting's program by William H. Schmidt, Jr., executive editor of *Railway Age*, who appraised the standing of the railroad industry in a growing economy. He found it "not doing too well."

Must "Get in Business Again"

To "get in business again," as Mr. Schmidt put it, the railroads should obtain from regulatory authorities more freedom to effect a "new look" in pricing and services, and reappraise their policies on regulation and government aids, since efforts made up to the present are obviously failing to produce results, even when the political climate is the most favorable that can be expected.

Other speakers at the meeting were A. Henry Walter, director of the ICC Bureau of Inquiry and Compliance, and A. R. Seder, AAR vice-president in charge of the Finance, Accounting, Taxation and Valuation Department. Division Chairman A. M. Jacobs, secretary and treasurer of the Katy, presided at the meeting.

At the election session, P. D. Fox, assistant vice-president and treasurer of the Pennsylvania, was chosen to succeed Mr. Jacobs in the chairmanship. Mr. Fox had been vice-chairman, and he was succeeded in that position by F. O. Linstead, treasurer of the Chicago & North Western. Richard E. Keefer continues as secretary.

The division was the first organization to meet in the Greenbrier's new theater. The meeting was the division's fourteenth, but it was the forty-third annual meeting of railroad treasury officers, including those held by the former Railway Treasury Officers Association.

About 420 members and guests attended. They were welcomed to the Greenbrier by John E. Kusik, vice-president—finance, Chesapeake & Ohio. J. J. Anzalone, C&O treasurer, was chairman of the Committee on Arrangements. The division's 1955 meeting will be held at the Roney Plaza, Miami Beach, Fla., from October 3 to 6, inclusive.

Katy President Fraser came to his advocacy of "selec-

RETIRING CHAIRMAN Jacobs (left), who presided at the meeting, greets his successor—Chairman-Elect Fox.

tive consolidations" after considering other prospective producers of more net income. In that connection he addressed himself first to the contention that "there is nothing much wrong with the railroads that a substantial and sustained dose of additional business cannot cure."

"This cure," Mr. Fraser said, "depends for its success on the ability of the individual railroads to make a fair profit on that new business. Heavy traffic volume, by itself, is no guaranty of an adequate net return to the owners of the railroads. The experience of the war years demonstrated this. With all the business they could handle, Class I lines returned an average dividend to stockholders of only 2.8 per cent. . . .

"To face this problem frankly, the cost of operating our railroad system, as presently constituted and under existing conditions, is just too high to provide any assurance that a fair return on investment can be attained—and maintained—even if traffic volume substantially increases."

From Crisis to Crisis

Mr. Fraser went on to say that the railroads, for 25 years, have been "rocking along on one crisis after another." His look at the financial results since dieselization prompted him to question whether the "basic condition" of the industry is much better, despite this "revolutionary change" in motive power and "countless other improvements" in facilities and methods.

"A study of income reports makes one wonder," Mr. Fraser added. "Although net income for all Class I lines last year reached the third highest point since 1921, . . . the average dividend payment on capital stock outstanding amounted to only 4.8 per cent. And last year marked only the fourth time since 1931 that this average reached as high as 4 per cent."

The Katy president went on to list other instances of railroad enterprise, including the acceptance of the pig-

(Continued on page 70)

Benchmarks and Yardsticks

A SURE WAY of getting into easy "communication" with another person is to let him know that some deep interest of yours is the same as one of his—an axiom long known and made use of by successful salesmen. But, almost as axiomatic, has been another assertion—that the conversation had better not touch on religion, because in that subject dissention rather than ease of "communication" is likely to arise.

Your reporter's observation leads him to suspect that religion is a dangerous ground upon which to seek mutual understanding, only if the conversation is allowed to get into specific details of theological doctrine. If one goes no further in such discussion than to indicate his belief in and subjection to a moral law ordained by a Supreme Being—he has set the stage for mutual understanding with anybody else of similar faith. Any religious sectarian will, of course, have many other important articles in his personal *credo*—about which sharp differences of opinion exist—but what's the use of letting differences over detail keep people apart, if they can agree on the basic issue of submission to Divine authority?

Is this not the one issue that is really fundamental in human relations? Those who believe they are obligated by a Power beyond their control to conduct themselves honestly, and with reasonable regard for the rights of others, have a strong foundation upon which to build mutual understanding and respect with others who accept similar subjection. But what basis is there for any kind of understanding with people who acknowledge no obligation of any kind—except coercion—to restrain their behavior in any way?

After all—all an out-and-out criminal is, is a person who acts as he pleases, regardless of the rights of others. To be a reliable person for effective human association, a man has to train himself to restrain his antisocial impulses; and to restrain them even when the police aren't looking. If a man operates under moral restraint because he believes there is an eye on him which is more penetrating and demanding than that of the police, then why should he keep this belief to himself?

Isn't this belief, really, the great issue that divides the world today? Certainly the Communists do not hold it—one of the central themes in their creed being the subordination of truth, justice, mercy and all the virtues to the goal of the attainment of power. Would we not strengthen the free world, if all of us who believe differently from the Communists were less bashful than we usually are in letting people know what we believe?—not the divisive details, but the uniting fundamental—our cheerful subordination to God and the moral law?

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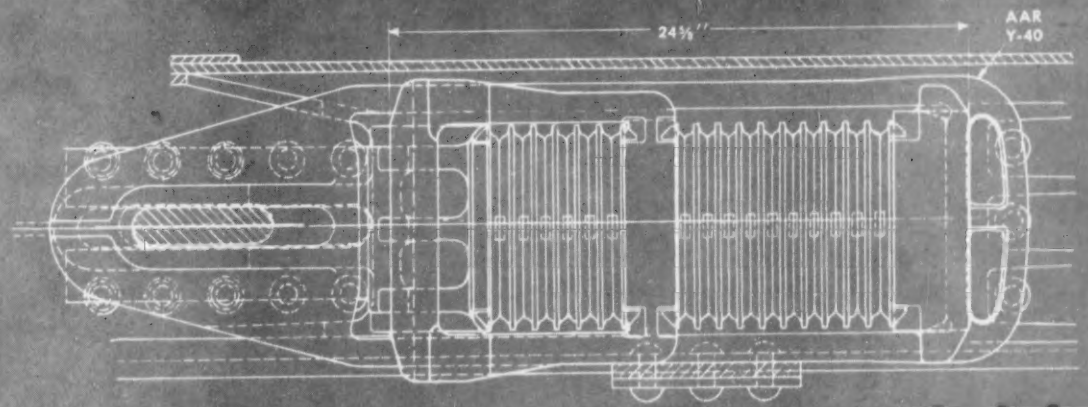

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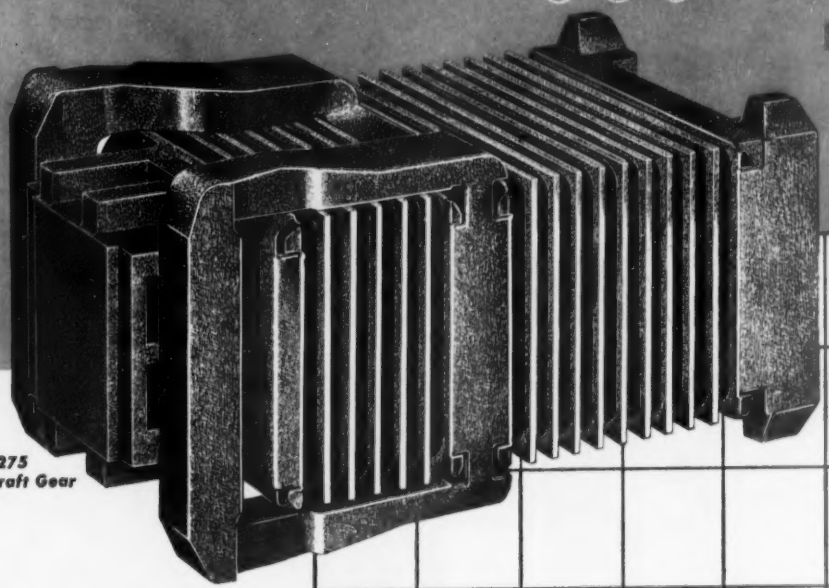

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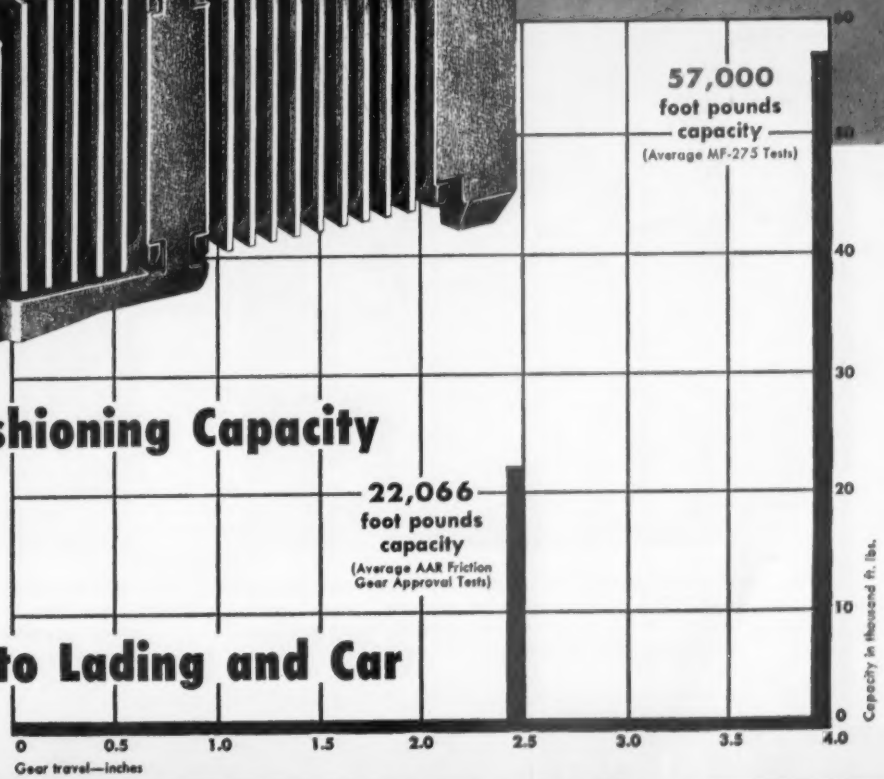
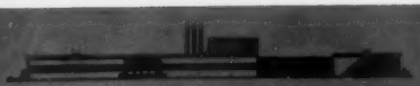


for Protection to Lading and Car



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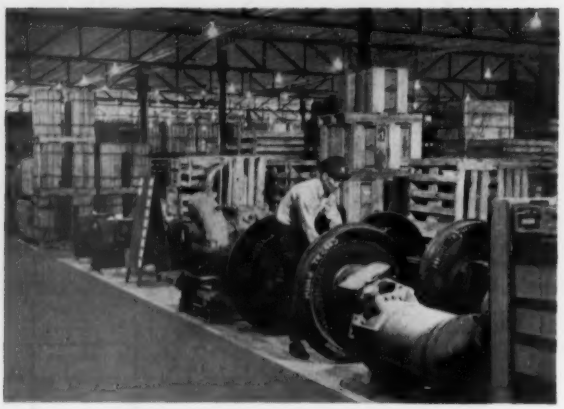

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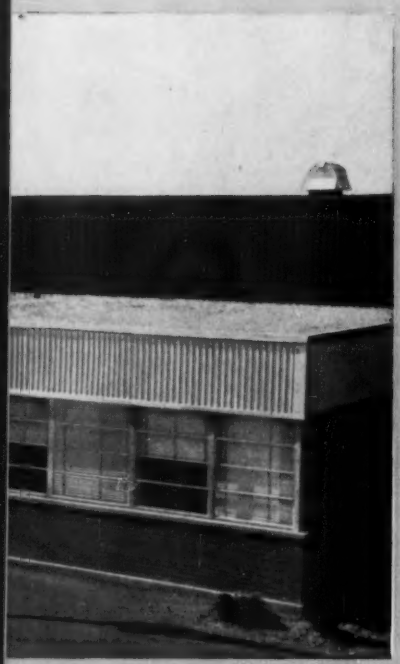

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●The Aeroquip hose lines shown here replaced rigid piping in the lube oil system on a Lehigh Valley diesel-electric locomotive.

●Lehigh Valley keeps Aeroquip bulk hose and fittings on hand so that hose lines can be made as they are needed to replace rigid tubing failures.

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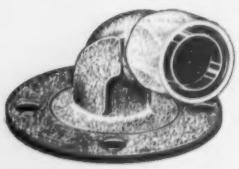

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The Crandic Goes Diesel

Concurrent with its 50th anniversary, the Cedar Rapids & Iowa City makes a complete change in motive power—and in communications

Recently, *Railway Age* reported the program for dieselization under way on the Fort Dodge, Des Moines & Southern (February 8, page 73). Dieselization has just been completed by another Iowa road—the 27-mile Cedar Rapids & Iowa City. Although the two roads are little more than 100 miles apart, their approach to the changeover differs markedly.

The Crandic (which takes its nickname from its initials) began operation in August 1904 as an electric interurban between Cedar Rapids and Iowa City. For some years frequent passenger service was the backbone of its business although freight traffic developed gradually. In recent years switching and side tracks have grown to a mileage almost equal to that of the main line. Today the road interchanges with the Rock Island at Iowa City and with the Illinois Central, the Chicago & North Western, the Milwaukee and the Waterloo, Cedar Falls & Northern at Cedar Rapids. Operation of both the freight and passenger services had been by 600 volt d-c trolley wire with power supplied by eight automatic rotary converter substations along the line, fed from a 33 kilovolt line on the same poles as the trolley wire.

Passenger business reached a peak in 1945 when 573,707 revenue passengers were handled. When this figure dropped to 188,317 in 1952 the company decided to transfer all passenger traffic to buses. The Iowa Commerce Commission granted a certificate. In November 1952 bus equipment leased from the Missouri Transit Company took over nine of the eleven daily round-trip schedules. In May 1953 the company sold its certificate, transferring all passenger operations to the Iowa City-Cedar Rapids Bus Lines.

For about three years prior to discontinuance of the rail passenger service, the Crandic's operating department had considered the possibility of diesel locomotive operation. When rail passenger service was dropped, this idea matured into a detailed study which pointed toward considerable economy as well as an opportunity to provide shippers with better service. On the basis of these studies the management approved the purchase of three SW-8 800-hp switching locomotives from the Electro-Motive Division of General Motors Corporation.

Fueling facilities were installed prior to delivery of the locomotives. Units of trolley-powered work equipment needed to operate the railroad were equipped either with gasoline engine drive or a-c electric motors. The new locomotives were delivered last October and shortly thereafter the electric power system was shut off. The overhead trolley wires, including feeders, totaled about 165 tons of copper. It was sold and has now been removed from the property.

Altogether, conversion to diesel power—including the locomotives and necessary changes in equipment and facilities—cost the Crandic about $335,000. Superintendent W. M. Schneider, in reporting the dieselization program to *Railway Age*, states that, after five months experience with the new power, "we are very much pleased and we find that our operating expenses are running very nearly the same as we had estimated."

Leased Communications

During the era of electric operation, the Crandic operated and maintained its own telephone line and equipment. When trolley wires were removed, the company decided to look into the use of leased commercial facilities from the Northwestern Bell Telephone Company. As a result, the railroad now leases a circuit for continuous use between the yard offices at Cedar Rapids and Iowa City.

The company also studied radio communications to link the two terminal yard offices and the locomotives. When these studies showed that both faster and more economical operation would result, arrangements were made with Northwestern Bell for rental and maintenance of the necessary equipment. Because of the profile of the railroad, it proved necessary to erect two fixed stations—one at each terminal city. The dispatcher at Cedar Rapids controls both stations. He reaches the Iowa City station by the leased telephone wire.

Cost-Cutting Mergers Advocated *(Continued from page 64)*

ICC'S WALTER reported indications of "a growing trend of failure" to comply with commission regulations relating to collection of charges.

AAR VICE-PRESIDENT Seder's message embodied a call for more effective employment of the "technique of the inquiring mind."

SECRETARY KEEFER presented report of Advisory Committee. It dealt with 24 subjects comprising the meeting's main docket of division business.

gybacking method of providing freight services. Here, he pointed out that the Katy's piggyback operation involves arrangements for hauling trailers of motor common carriers. He called this a "marriage of conveyances" which "should and will develop into a permanent marriage of convenience between the railroad and motor carrier industries—to the substantial and lasting benefit of both."

Emphasizing that he had "no fault to find" with other roads which have adopted different piggybacking plans, Mr. Fraser said: "I simply contend that there is a fertile area which can be developed by frank and sincere cooperation to the advantage of both the railroad and trucking industries."

While he conceded that the foregoing and other prospective developments "hold real promise," Mr. Fraser insisted that "their total impact can hardly be such as would restore the entire industry to the financial stability it must have to meet the challenge ahead." Thus his merger proposition, for which he argued in part as follows:

"Packaged Service" Demanded

"Selective mergers could meet the public's growing demand for packaged service, which connotes the modern idea of a simple and all-inclusive performance—a packaged service in a packaged economy. The American business man and the American consumer today have been fully sold on completeness in purchase of service.

We no longer buy the house from one party, the financing from another and the insurance from a third. The complete, streamlined, economical deal is the thing. Why should not the purchaser of transportation be given a similar, all-inclusive package by the railroads? He should.

"Consolidations such as I have in mind could lower the present barriers between the railroads and the improvements and modernizations they so earnestly desire but which they individually cannot now attain under existing conditions—such advances as roller-bearing freight cars, lighter, faster but less costly passenger equipment, and the many other developments which constantly are coming on the market.

"Certainly all of these possibilities and advantages are worthy of attainment, and the expansion potential of the national economy justifies the most serious consideration of this approach to a solution."

South's Roofing Rates "on Beam"

Mr. Schmidt's determination that the railroads are "not doing too well" was based on his finding that they are at least two billion dollars short of the annual gross they should have if they had moved along with general business instead of missing out on the postwar boom. He also cited ICC studies indicating that the railroads' 1952 business was only 67 per cent of what it would have been if they had maintained their relative 1928 position as carriers of the nation's freight.

This railroad slippage was more rapid during the last six years than in the years before World War II, Mr. Schmidt added. In the fiscal year ended June 30, 1953, he said, the railroads got only 59 per cent of the government's military freight, which previously had been considered pretty much rail-bound. Moreover, the railroads' "share" of troop-transport business was only 45 per cent of the year's total.

Because the railroad average revenue per ton-mile is less than 1½ cents, while common-carrier truckers get 5½ cents, Mr. Schmidt suggested it might be thought that the only railroad action necessary is to "price the product on a cost basis and take over the business." But the railroad business' "point of stress," as he put it, is its pricing system, "which is based on monopoly but has to live a competitive life."

Pricing on the monopoly pattern worked beneficently

for the country as a whole—until other carriers came along and picked off the most desirable traffic, Mr. Schmidt noted. He recognized that changed pricing practices will involve difficulties, including the break with tradition and, perhaps, some temporary revenue losses in spots. At the same time, however, he found little to defend in the present situation which leaves a low-cost agency losing traffic to its high-cost competitors.

As an example of the new pricing he has in mind, Mr. Schmidt cited the recent adjustment of rates on roofing materials moving in Southern territory. There, as he explained, the railroads found the zone within which their rates were "holding an umbrella over the trucks" and cut rates in that zone—but nowhere else.

Rates of that type he called "revolutionary in concept." They reflect the differential charging concept," and they don't try to "keep everyone in business" by balancing factors of market competition. They are designed, Mr. Schmidt went on, to put tonnage on the railroads—to hit rate levels where competitors can't ever "git."

To such concepts, Mr. Schmidt would add "bargain rates" for good railroad customers. The "bargains" would not be available to shippers who use railroads only as stand-by facilities. He noted that this principle has been recognized in Great Britain. And he identified it as the principle behind commutation-rate scales in this country.

The commuters, being the "good customers," get a break while the suburbanite who rides the train only when it snows is charged full fare. Moreover, it is the "same principle that has saved utilities from competition of privately produced power."

The speaker went on to contend that the railroads must have like freedom in pricing. "The measure of regulation," he said, "is how well it works. The ICC's job is to foster common carriers. The commission is trying to make regulation work in a world where transportation is done increasingly by carriers not subject to its jurisdiction."

The British approach is different here, too, Mr. Schmidt pointed out. He recalled how British railroads (which are government owned) were given new pricing freedoms when the government "denationalized" the trucking industry. Thus the British roads were "fitted with weapons to defend themselves."

In a brief reference to piggybacking, Mr. Schmidt predicted that there will be a "struggle of ideas" before some form of this operation emerges as the most generally accepted method. Meanwhile, he does not blame those railroads which are "studying a 'marriage of convenience' until they know what the joint housekeeping arrangement is to be."

Mr. Schmidt's conviction that the railroads must find a new policy regarding government controls and aids is based on their record in the adjourned Congress, which was Republican-controlled and, "perhaps, as conservative as any Congress that can now be expected." He noted that the Congress approved the St. Lawrence Seaway and failed to enact any "railroad bill."

"Although the railroads have argued forcefully, honestly and logically against government handouts for transportation for at least 30 years, subsidies for the railroads' rival are expanding more and more in their impact on the economy," the *Railway Age* editor argued. "There are no significant signs of a change in the trend—only an intensification, as witness the St. Lawrence Seaway legislation and the big increase in federal highway funds both put into effect and promised." Mr. Schmidt said he is forced reluctantly to the conclusion that it is "politically impossible to discourage people from wanting more highway, waterway and air transport facilities and services"; that politicians can't, or won't, collect their cost from the users; and that the railroads' opposition to such projects, "just though it is, merely gets them the reputation for standing in the way of progress." Sounding what he conceded was a cynical note, Mr. Schmidt asked: "How long can you wait for justice?"

Joint Rail-Public Project Proposed

"I wish I had the genius to suggest a way by which the railroads can secure permanently and positively the proven benefits of private ownership and control and at the same time share in the growth and competitive vigor which, in the weird and warped world of transportation, appear to come from public funds. Somebody is going to have to come up with such a program, so that a desire for bigger and better railroads will bring just as much public enthusiasm—and funds—as the obvious yearning for growth in other agencies."

In the meantime, the speaker ventured to nominate a "candidate" for a joint railroad-public project.

The "nominee" is railroad suburban passenger service. Here is railroad transportation which the people want, but which is a losing proposition, Mr. Schmidt said. There, he thinks, is a set-up for "marriage of convenience" between railroad and public funds. And he suggested that first experiment with such a marriage be tried in "some commuting sore spot."

"I don't know any other way to live in today's political climate except to make this first experiment," Mr. Schmidt concluded. "The rules of the transport game have changed, but the railroad industry still has what it takes. It requires only adaptability."

Director Walter of the ICC's Bureau of Inquiry and Compliance discussed that bureau's work with emphasis on the "common objective" of the commission and carriers to see that all charges are collected. His address pointed up his view that demurrage and transit tariffs are not sufficiently clear. And he indicated that he was about ready to recommend that the commission request the carriers to publish clarifying revisions.

AAR Vice-President Seder's address was about "the railway treasurer as a member of the management team." Treasurers occupy an important position in management's "offensive or profit-making function, and the degree of importance is largely in your own hands for the making," Mr. Seder said. He added:

"Nowhere in the railroad business, it seems to me, is there greater opportunity for the exercise of the inquiring mind than in the treasurer's office. In an important sense cash is the blood stream of a business and you have your finger on the pulse."

During intervals between the addresses, the division's members disposed of a business docket which included reports of standing committees and sectional groups.

New Facilities

New Haven. — The board of directors has authorized an expenditure of $500,000 toward the cost of a grade-crossing elimination program in Mansfield, Mass. Of the authorized money, $375,000 would be the road's direct contribution toward cost of the work and $125,000 would be expended for relocation of several industries on a 9.57-mile branch line which, subject to ICC approval, would be abandoned under the plan.

Equipment & Supplies

FREIGHT CARS

The **Reading** is inquiring for 1,000 50-ton hopper cars and 200 70-ton fixed-end gondola cars.

The **Rock Island** has ordered 100 50-ft box cars from the Pullman-Standard Car Manufacturing Company. They will be equipped with "DF" loading equipment by the Evans Products Company. Delivery is scheduled for October.

The **Western Pacific** has ordered 100 double-door 50-ft box cars from the Pullman-Standard Car Manufacturing Company at a cost exceeding $800,000. Board authorization to purchase these cars was reported in last week's *Railway Age*, page 13. Delivery is scheduled for the last quarter of 1954.

PASSENGER CARS

The Union Pacific has ordered 35 sleeping cars from the Pullman-Standard Car Manufacturing Company at a cost of $7 million. The order consists of three cars with five double bedrooms, 2 compartments and two drawing rooms, twelve with six roomettes, four double-bedrooms and six sections, ten with eleven double bedrooms and ten "five double-bedroom club-section cars." Deliveries are to begin next summer.

Supply Trade

E. N. Cundiff has been appointed manager of the **Graybar Electric Company's** Toledo branch to succeed **A. W. Hallett,** who will be assigned special duties in Cleveland.

Edward C. Hamm has been named vice-president and director of sales of the **Colson Corporation.** He was president and general manager of Service Caster & Truck Corp., assets of which were acquired by Colson last May.

R. C. Mahon Company has completed its latest plant expansion program, which has added 130,000 sq ft of factory space and 20,000 sq ft of office space to its facilities in Detroit.

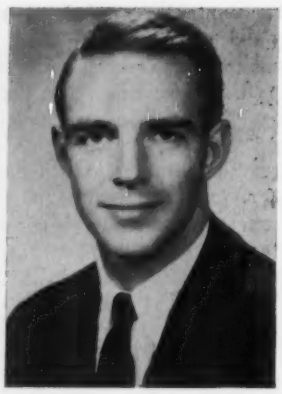
Western Railroad Supply Company has appointed **Melville Machinery Company, Ltd.,** 738-740 Mountain street, Montreal, as railroad sales representative in Canada.

Ratchet and sectional bulkheads formerly marketed only by the **Pittsburgh Steel Products Company** are now being handled by the **Brandon Equipment Company.**

The manufactured equipment and complete supply line of railroad products of the **Kellogg Switchboard & Supply Co.** is now being sold through the **Railroad Industry Sales Organization** of the **Federal Telephone & Radio Co.** Kellogg and Federal are divisions of the **International Telephone & Telegraph Corp.**

LeTourneau-Westinghouse Company has appointed the **Camef Equipment Corporation** as agent to distribute its equipment and parts to railroads in the Chicago and Detroit areas, including smaller railroads with general offices near Chicago.

National Bearing Division of the **American Brake Shoe Company** has announced the following appointments: **Norman Birch,** vice-president in charge of operations; **I. Eugene Cox,** vice-president in charge of engineering and development; and **Bernard Esarey,** works manager of the Meadville, Pa., plant. Mr. Esarey also continues as chief engineer of the division.



JOHN FURRER, who has been appointed manager, Talgo project, of ACF Industries, Inc. Mr. Furrer, associated with the ACF Talgo train for over five years, has spent considerable time in Spain, where two Spanish Talgo trains have been in successful revenue operation for four years.

THIS GENERAL ELECTRIC 65-ton diesel unit—during 10 years of hauling cars of ore, finished pig aluminum and freight in and out of the plant yard—has missed only one day out of a normal 8-hr-day, 5-day-week work schedule at the Carolina Aluminum Company, Badin, N. C. Over the past decade, fuel cost for the unit has been about 25% of the fuel cost for its predecessor steam-powered switcher.

Railway Officers

CANADIAN NATIONAL.—Martin D. Whitaker, auditor of general accounts, has been named assistant to comptroller at Montreal. **A. A. Curtis,** assistant chief statistician, has been appointed chief statistician, at Montreal, succeeding **A. W. Kerr,** who has retired after nearly half a century of railway service. **Leslie McCammon** has been appointed auditor of revenues; **J. D. Reynolds,** auditor of agencies, and **F. J. Pringle,** auditor of overcharge claims, all at Montreal. **E. W. Brown** has been appointed assistant to regional auditor at Toronto.

Raymond G. Holden, perishable

traffic agent, has been appointed general agent, freight traffic department, with headquarters as before at New York, succeeding **Roderick J. MacDonald,** who has been transferred to Pittsburgh to replace **Gordon M. Newby,** promoted. **Earl H. R. Eastwood,** chief clerk, passenger department at New York, has been appointed general agent, passenger department, Washington, D.C., succeeding **Roy C. Curley,** who will retire on pension September 30, after 32 years of service.

CHICAGO & WESTERN INDIANA and BELT RAILWAY OF CHICAGO. — **A. B. Finegan** has been appointed freight claim agent at Chicago, succeeding **M. S. Leaming,** who retired July 1 after more than 36 years of service.

DETROIT, TOLEDO & IRONTON.—Grover U. Fairbanks has been appointed general southwestern agent in charge of a new district office at Room 2171, Railway Exchange building, St. Louis 1.

DULUTH, SOUTH SHORE & ATLANTIC. — Howard J. Furness has been promoted to general agent at Chicago.

GEORGIA SOUTHERN & FLORIDA — Effective September 15, the GS&F acquired control of the properties of the Live Oak, Perry & Gulf, which will continue to be operated as an independent short line. On the same date, interline billing from and to all stations and for all commodities was established. No separation as to prior and current accounts will be necessary. All interline freight accounts, per diem accounts, claims, miscellaneous bills, etc., should be rendered in the name of the Live Oak, Perry & Gulf.

Also effective September 15, the properties of the South Georgia, extending from Adel, Ga., to Springdale, Fla., are being operated for the account of the GS&F. All transactions after midnight September 14, were for account of the GS&F. Stations on that line will be shown in open and prepay tariff as GS&F stations (formerly South Georgia).

All settlements, adjustments or correspondence pertaining to the prior accounts of the South Georgia or to the accounts of the Live Oak, Perry & Gulf should be handled with the following: Freight Accounts, **Noah Garner,** auditor of freight accounts, Atlanta, Ga.; Per Diem and mileage accounts, **F. I. Umhau,** superintendent car service, Atlanta; Overcharge Claims, **E. N. Byrd,** auditor of overcharge claims, Atlanta; Loss and Damage Claims, **M. M. Barber,** general freight claim agent, Chattanooga, Tenn.; Miscellaneous Bills, **T. P. Carter,** auditor of disbursements, Washington, D.C.

ILLINOIS TERMINAL. — Leroy W. Peters, freight traffic manager at St. Louis, Mo., has resigned to accept employment with another carrier, and the position of freight traffic manager, sales and service (St. Louis area) has been abolished. **Walter R. Lankford,** assistant general freight agent, has been promoted to general freight agent at St. Louis.

MISSOURI-KANSAS-TEXAS. — Thomas S. Carter, Jr., assistant chief engineer at St. Louis, has been promoted to chief engineer at that point, succeeding **Kenneth H. Hanger,** who retired September 1 after 34 years of service with the company. A photograph and biography of Mr. Carter were published in *Railway Age* September 13, 1953, page 31.

MONON.—Dr. Edward T. Stahl has been appointed chief surgeon at Lafayette, Ind.

NEW HAVEN.—George T. Carmichael, vice-president, secretary and treasurer at New Haven, has been elected senior vice-president and will continue to have jurisdiction over the finance, corporate and insurance departments of the road, in addition to special matters assigned by the president. **John F. Larkin,** assistant secretary, has been elected secretary; **Reginald H. Breitenstein,** assistant treasurer, has been named treasurer. **Clarence R. Smith** and **J. Edward Berg** have been elected assistant secretary and assistant treasurer, respectively.

NEW YORK CENTRAL — W. F. Kascal, mechanical superintendent of the Texas & Pacific at Dallas, has been appointed chief mechanical officer of the NYC at New York. **F. K. Mitchell,** who continues as assistant vice-president, equipment, has been assigned to special staff duties with Karl A.Borntrager, vice-president, operations and maintenance.

The locomotive department of the

W. F. Kascal

West division of the Michigan Central district, including Niles, Mich., has been placed under the jurisdiction of **H. W. Rasor,** master mechanic—locomotive, at Chicago, and the car department of the West division of the MC district, including Niles, has been placed under the jurisdiction of **W. E. Anderson,** master mechanic—car, at Chicago.

Thomas J. Deegan, Jr. has been appointed staff vice-president with duties to be assigned by the president. Mr. Deegan will continue as vice-president and director of Alleghany Corporation and as chairman of the Federation for Railway Progress.

TEXAS & NEW ORLEANS. — Tom M. Davis has been appointed general counsel at Houston.

B. S. Sines, vice-president at Houston, has been elected president of Southern Pacific Transport Company and Southern Pacific Transport Company of Louisiana, Inc., as well as executive vice-president of Southern Pacific Terminal Company, all T&NO affiliates. Mr. Sines succeeds **K. P. Chinn,** who retired recently from these positions as well as that of assistant executive vice-president of the T&NO.

OBITUARY

John Leonard Vogel, who retired last March as engineer of structures of the **Lackawanna** at Hoboken, N.J., died August 23.

Walter C. Barrett, retired chief of personnel, **Lehigh Valley,** Bethlehem, Pa., died July 14 at his home in that city.

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112 OFFICES ACROSS THE NATION

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Akron, Canton and Youngstown	July	171	$383	....	$391	$543	$69	$76	$7	$60	$59	$14	$36	$138	$340	$359	86.9	66.2	$51	$22	$14	$70
	7 mos.	171	2,856	....	2,910	3,770	457	494	42	445	361	106	263	946	2,377	2,367	81.7	62.8	533	228	186	580
Atchison, Topeka & Santa Fe	July	13,076	39,497	$4,722	48,466	58,367	7,716	8,182	723	8,676	9,831	1,929	1,204	15,769	35,705	38,202	73.7	65.5	12,761	5,985	6,573	7,845
	7 mos.	13,072	253,496	25,207	307,648	367,992	45,316	53,348	4,652	59,249	64,900	13,374	8,481	102,053	229,474	250,179	74.6	68.0	78,174	42,482	35,214	48,698
Atlanta & St. Andrews Bay	July	82	297	2	305	291	22	34	3	25	23	5	6	69	140	136	46.0	46.8	165	75	56	46
	7 mos.	82	2,148	8	2,199	2,236	170	211	20	159	152	32	41	484	985	998	44.8	44.6	1,214	538	430	358
Atlanta & West Point	July	93	221	40	303	357	36	58	5	46	63	6	14	138	255	306	84.2	85.8	48	20	14	13
	7 mos.	93	1,650	244	2,226	2,605	306	368	45	377	479	84	106	973	1,914	2,194	86.0	84.2	312	143	60	128
Western of Alabama	July	133	244	38	311	386	48	39	11	61	63	14	16	135	280	283	90.1	73.4	31	16	18	48
	7 mos.	133	1,975	235	2,453	2,745	367	401	57	443	483	115	120	924	2,001	2,156	81.6	78.5	452	171	278	278
Atlantic & Danville	July	205	96	....	97	155	20	35	2	15	15	5	11	43	98	129	100.5	83.0	—1	8	—28	—8
	7 mos.	205	932	....	943	1,169	206	243	13	80	105	34	81	322	769	875	81.5	74.8	175	61	—61	50
Atlantic Coast Line	July	5,353	8,427	1,400	10,808	12,163	2,322	2,482	197	2,736	3,460	595	379	4,578	10,605	11,822	98.1	97.2	204 Cr	250	281	201
	7 mos.	5,361	73,414	11,566	92,844	102,678	14,788	17,145	1,277	18,633	24,487	4,145	2,742	33,959	74,444	85,758	80.2	83.5	18,399	8,500	6,915	5,600
Charleston & Western Carolina	July	343	446	2	464	578	156	159	8	106	105	42	18	164	459	472	98.8	81.7	5	Cr. 15	16	56
	7 mos.	343	3,840	11	3,945	4,274	1,048	1,046	55	717	702	298	126	1,168	3,158	3,155	80.0	73.8	787	315	397	570
Baltimore & Ohio	July	6,183	27,839	1,776	31,999	39,879	3,805	5,326	507	6,511	8,325	1,024	825	13,756	26,489	32,129	82.8	80.6	5,510	1,752	2,413	3,884
	7 mos.	6,183	192,587	11,628	220,238	270,498	25,695	35,309	3,193	43,763	57,161	7,165	5,950	93,591	179,942	213,384	81.7	78.9	40,296	12,665	19,333	27,664
Staten Island Rapid Transit	July	29	150	51	203	279	48	46	12	23	26	2	2	130	235	242	115.9	86.6	—32	39	—89	—19
	7 mos.	29	1,246	356	1,621	2,045	336	423	82	182	213	14	11	898	1,636	1,894	100.9	92.6	—15	270	—415	—263
Bangor & Aroostook	July	602	592	37	674	777	200	200	17	246	234	89	18	263	792	763	117.6	98.2	—119	Cr. 23	90	129
	7 mos.	602	8,333	212	8,851	8,655	1,900	1,900	112	1,600	1,639	570	139	2,254	6,378	6,294	72.1	72.7	2,474	1,063	1,612	1,413
Bessemer & Lake Erie	July	209	2,421	1	2,434	3,230	211	274	16	487	772	149	43	450	1,290	1,660	53.0	51.4	1,144	655	703	700
	7 mos.	209	12,575	3	12,679	17,630	1,456	1,508	140	4,234	5,187	1,000	193	2,878	9,450	10,669	74.5	60.5	3,229	1,663	2,753	3,493
Boston & Maine	July	1,676	4,646	1,072	6,506	7,159	1,286	1,364	181	826	1,103	182	124	3,007	5,559	5,976	85.5	83.5	946	488	24	275
	7 mos.	1,676	35,877	6,300	47,648	52,204	9,074	9,236	1,157	7,137	7,934	1,217	840	21,480	40,864	42,284	85.8	81.0	6,784	3,533	—148	2,807
Cambria & Indiana	July	35	101	....	101	134	20	21	1	98	83	22	....	20	145	132	143.3	98.9	144	38	51	73
	7 mos.	35	869	....	870	1,044	136	131	5	730	663	156	1	149	1,065	990	122.5	94.8	—196	357	451	540
Canadian Pacific Lines in Maine	July	234	238	53	329	376	83	133	5	88	90	17	8	169	365	433	110.8	115.0	—36	29	—68	—110
	7 mos.	234	3,460	341	4,011	4,521	687	802	38	769	1,010	122	56	1,565	3,183	3,727	79.4	82.4	828	195	386	320
Canadian Pacific Lines in Vermont	July	90	179	11	213	228	43	124	5	27	31	....	7	120	207	301	97.3	131.9	6	13	—63	—148
	7 mos.	90	1,302	89	1,549	1,596	311	531	31	205	262	1	48	845	1,473	1,769	95.1	110.8	76	89	—428	—648
Central of Georgia	July	1,764	2,786	172	3,151	3,461	508	571	43	507	570	132	143	1,261	2,619	2,899	83.1	83.8	532	213	321	264
	7 mos.	1,774	20,062	1,129	23,096	26,053	3,622	4,171	308	3,770	4,099	967	1,000	9,173	19,032	20,610	82.4	79.1	4,064	1,496	2,253	2,433
Central of New Jersey	July	613	3,658	486	4,424	5,300	576	738	88	758	971	177	70	1,963	3,559	4,309	80.4	81.3	865	426	204	414
	7 mos.	613	26,761	3,104	32,282	36,779	4,443	4,996	612	5,943	7,286	1,223	534	14,000	26,327	29,732	81.6	80.8	5,955	3,221	1,667	2,753
Central Vermont	July	422	722	85	867	959	264	247	17	116	115	11	17	359	797	801	92.0	83.6	70	43	—72	27
	7 mos.	422	5,402	421	6,297	6,781	1,473	1,439	115	761	927	75	119	2,579	5,223	5,394	82.9	79.5	1,074	291	93	456
Chesapeake & Ohio	July	5,115	20,826	712	23,080	28,632	3,178	3,718	408	4,443	5,607	1,504	645	8,479	18,029	20,611	78.1	72.0	5,051	1,868	3,478	4,815
	7 mos.	5,100	158,005	4,448	171,263	199,677	25,043	27,440	2,652	34,712	38,461	10,585	4,860	59,454	133,177	142,449	77.8	71.3	38,086	14,922	25,655	33,382
Chicago & Eastern Illinois	July	868	2,165	262	2,636	3,214	358	444	28	355	528	131	129	1,075	2,099	2,376	79.6	73.9	537	71	343	414
	7 mos.	868	15,280	1,603	18,749	21,330	2,432	2,678	195	3,160	3,707	914	906	7,378	15,123	16,156	80.7	75.7	3,626	924	1,988	2,528
Chicago & Illinois Midland	July	130	677	....	699	776	110	78	16	139	152	23	31	216	542	518	77.6	66.7	156	70	37	97
	7 mos.	130	4,193	....	4,291	5,088	497	581	57	978	1,078	163	232	1,423	3,459	3,768	80.6	74.1	833	395	198	451
Chicago & North Western	July	7,876	12,390	2,356	16,405	18,273	2,650	3,432	347	2,902	3,298	836	381	7,514	14,348	15,970	87.5	87.4	2,057	1,069	268	240
	7 mos.	7,876	81,312	12,682	105,446	116,824	17,055	20,306	2,425	20,016	22,198	5,753	2,682	50,142	95,837	104,135	90.9	89.1	9,609	7,267	—2,398	1,612
Chicago, Burlington & Quincy	July	8,858	16,917	1,942	21,031	25,714	2,801	5,051	433	3,589	3,306	805	501	8,000	16,793	18,063	79.9	70.2	4,238	1,961	2,112	3,216
	7 mos.	8,862	116,028	10,571	142,738	158,947	19,912	25,554	2,784	24,348	23,117	5,562	3,522	54,237	107,803	113,893	75.5	71.7	34,936	17,543	15,660	17,899
Chicago Great Western	July	1,470	2,509	25	2,698	2,962	400	475	41	409	352	120	108	853	1,852	1,936	68.6	65.4	846	313	329	396
	7 mos.	1,470	17,421	67	18,663	16,115	2,729	2,641	302	2,896	1,977	843	772	5,882	12,809	11,005	68.6	68.3	5,854	2,144	2,344	2,168
Chicago, Indianapolis & Louisville	July	541	1,484	63	1,667	1,872	221	385	24	266	284	75	87	620	1,292	1,488	77.5	79.5	374	121	141	158
	7 mos.	541	10,511	423	11,809	12,690	1,765	2,407	154	1,810	1,888	494	622	4,335	9,241	9,959	78.2	78.5	2,568	867	1,028	1,102
Chicago, Milw., St. Paul & Pacific	July	10,640	15,407	1,591	19,203	21,805	4,068	4,470	449	3,341	4,564	892	501	7,997	16,987	19,223	88.5	88.2	2,215	1,368	—2	568
	7 mos.	10,639	110,001	8,401	132,628	148,708	23,498	24,803	2,872	28,513	32,078	6,223	3,368	54,919	117,301	126,934	88.4	85.4	15,328	9,304	1,095	6,443
Chicago, Rock Island & Pacific	July	7,885	14,057	1,698	17,257	20,682	2,521	2,935	248	2,566	2,826	564	474	5,987	12,372	13,619	71.7	65.8	4,886	1,975	1,760	2,894
	7 mos.	7,886	89,953	9,947	110,295	126,584	14,674	15,730	1,744	18,498	19,198	3,954	3,385	41,025	83,349	86,738	75.6	68.5	26,946	10,864	10,431	16,973
Chic., St. Paul, Minn., & Omaha	July	1,616	2,394	192	2,827	3,047	479	597	47	353	486	90	64	1,317	2,352	2,702	83.2	88.7	476	168	—25	—92
	7 mos.	1,616	15,678	1,046	18,218	18,915	2,895	3,411	337	2,785	3,014	642	448	9,009	16,034	17,577	88.0	92.9	2,185	1,162	—855	—1,421
Clinchfield	July	317	1,444	....	1,452	1,873	288	410	20	250	333	91	45	378	1,001	1,282	68.9	68.5	451	123	411	502
	7 mos.	317	11,538	4	11,598	14,405	2,163	2,527	137	2,137	2,427	911	331	2,683	7,608	8,503	65.6	59.0	3,990	1,558	2,763	5,090

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Colorado & Southern	July	729	1,002	89	1,212	1,365	222	223	18	229	158	41	32	450	995	941	82.1	68.9	218	102	96	167
	7 mos.	729	6,491	445	7,791	9,171	1,091	1,170	139	1,590	1,271	290	215	2,969	6,277	6,210	80.6	67.7	1,514	699	672	1,291
Ft. Worth & Denver	July	1,038	1,705	193	2,060	1,869	233	316	32	274	245	44	63	639	1,317	1,352	63.9	72.4	744	259	347	220
	7 mos.	1,038	10,680	929	12,740	13,891	1,959	2,115	271	1,922	1,841	303	413	4,314	9,301	9,589	73.0	69.0	3,439	979	1,629	1,923
Colorado & Wyoming	July	40	144	....	237	282	26	14	2	31	34	11	1	94	165	163	69.4	57.7	72	41	31	48
	7 mos.	40	790	....	1,413	2,052	100	135	14	186	250	80	10	610	986	1,224	69.7	59.6	427	213	201	328
Columbus & Greenville	July	168	117	....	123	148	33	39	4	26	26	6	5	45	127	136	103.6	91.8	—4	4	—10	1
	7 mos.	168	1,030	....	1,081	1,198	209	250	26	181	183	43	31	323	877	938	81.1	78.3	204	149	50	99
Delaware & Hudson	July	793	3,369	189	3,698	4,601	529	902	58	736	788	179	91	1,501	3,057	3,626	82.7	78.8	641	279	327	726
	7 mos.	793	25,540	1,066	27,669	31,816	4,012	5,269	372	5,488	5,762	1,263	621	10,683	22,267	24,341	80.5	76.5	5,402	1,970	3,013	5,365
Delaware, Lackawanna & Western	July	962	4,820	818	6,212	7,408	793	1,022	151	1,014	1,329	317	174	3,040	5,279	6,058	85.0	81.8	933	423	428	693
	7 mos.	962	35,468	5,400	45,362	52,956	5,588	6,150	983	7,734	9,015	2,226	1,241	21,279	37,806	40,809	83.3	77.1	7,556	3,391	3,649	5,984
Denver & Rio Grande Western	July	2,164	5,100	328	5,676	6,992	784	1,305	123	898	1,130	286	179	1,863	4,043	5,154	71.2	73.7	1,633	625	955	756
	7 mos.	2,165	36,905	1,626	40,116	48,908	5,815	7,063	797	6,538	8,059	2,005	1,310	12,139	27,831	32,889	69.4	67.3	12,285	5,231	7,325	6,958
Detroit & Mackinac	July	232	170	....	172	190	40	42	3	24	23	9	4	40	119	120	68.9	63.1	54	28	26	29
	7 mos.	232	1,084	3	1,107	1,189	280	292	19	160	168	66	34	255	809	818	73.1	68.8	297	184	147	182
Detroit & Toledo Shore Line	July	50	496	....	536	711	83	84	3	59	63	18	16	184	355	397	66.3	55.8	181	47	44	98
	7 mos.	50	4,217	....	4,533	5,242	556	564	22	413	450	125	118	1,333	2,518	2,728	55.5	52.0	2,015	661	565	813
Detroit, Toledo & Ironton	July	464	1,235	....	1,284	1,808	279	265	27	242	260	98	38	422	1,045	1,297	81.4	71.8	239	109	189	232
	7 mos.	464	10,285	2	10,661	13,105	1,894	1,701	163	1,868	1,731	681	246	3,068	7,554	9,275	70.9	70.8	3,107	1,235	1,785	1,638
Duluth, Missabe & Iron Range	July	566	5,677	2	6,592	8,871	493	826	62	612	699	110	10	1,591	2,830	3,783	42.9	42.6	3,763	1,294	2,437	1,691
	7 mos.	567	19,346	4	22,592	33,896	3,732	4,175	441	5,276	5,194	775	71	7,572	17,441	20,571	77.2	60.7	5,151	2,636	2,362	4,640
Duluth, South Shore & Atlantic	July	553	571	7	625	784	151	207	10	117	155	23	28	219	537	639	85.9	81.5	88	29	53	90
	7 mos.	553	3,756	35	4,018	5,034	896	1,093	73	894	1,073	162	191	1,389	3,526	4,070	87.8	80.9	491	194	225	385
Duluth, Winnipeg & Pacific	July	175	548	1	557	381	96	105	4	53	83	2	5	227	389	391	69.8	102.7	168	42	56	—98
	7 mos.	175	3,104	6	3,159	3,011	536	594	30	456	513	15	38	1,466	2,548	2,555	80.7	84.8	610	245	—142	—181
Elgin, Joliet & Eastern	July	236	2,643	....	3,312	4,749	206	358	30	409	798	114	36	1,282	2,097	3,017	63.3	63.5	1,215	210	869	552
	7 mos.	236	20,937	....	25,797	33,279	1,767	2,145	175	11,342	6,661	802	250	9,850	24,403	21,937	94.6	65.9	1,394	1,513	—1,676	2,894
Erie	July	2,225	10,447	675	12,184	15,539	2,265	2,450	236	2,016	2,299	510	344	5,677	10,953	12,057	89.9	77.6	1,231	Cr. 331	880	1,352
	7 mos.	2,224	77,296	3,985	88,487	106,689	12,486	13,988	1,648	14,458	15,207	3,541	2,486	37,936	71,937	78,471	81.3	73.6	16,550	4,610	7,454	11,671
Florida East Coast	July	571	1,321	362	1,824	1,943	565	410	46	524	565	78	76	834	2,144	2,086	117.5	107.4	—319	108	—520	—10
	7 mos.	571	14,474	4,116	20,244	21,626	2,810	2,626	311	3,437	3,730	545	545	7,652	15,685	15,802	77.5	73.1	4,558	1,329	1,767	2,895
Georgia Railroad	July	321	574	30	661	776	104	118	10	136	136	35	32	306	612	648	92.5	83.6	50	36	51	130
	7 mos.	321	4,199	169	4,833	5,603	877	846	65	914	955	230	237	2,104	4,378	4,592	90.6	82.0	455	248	451	953
Georgia & Florida	July	336	275	....	277	357	161	111	86	30	40	8	19	86	313	292	112.9	81.9	—36	15	—78	15
	7 mos.	336	2,011	....	2,034	2,395	701	732	107	269	266	53	137	642	1,865	1,939	91.7	81.0	169	104	—117	112
Grand Trunk Western	July	952	3,965	281	4,554	5,237	777	897	59	754	807	89	79	2,157	3,947	4,318	86.7	82.5	607	309	—180	219
	7 mos.	952	30,081	1,484	33,923	37,643	4,913	5,174	369	5,938	6,113	625	551	15,189	27,871	29,024	82.2	77.1	6,052	2,192	1,308	4,127
Can. Nat'l Lines in New Eng.	July	172	132	20	171	228	78	78	14	24	23	....	3	144	266	257	155.8	112.9	—95	25	—173	—103
	7 mos.	172	1,101	48	1,297	1,639	505	501	71	231	285	1	19	946	1,805	1,924	139.2	117.4	—508	175	—1,064	—816
Great Northern	July	8,306	20,947	1,160	23,920	25,636	4,534	4,652	294	3,384	4,159	773	408	7,194	16,449	17,702	68.8	69.1	7,471	3,668	3,142	3,139
	7 mos.	8,305	120,682	6,143	136,993	146,764	27,333	28,367	2,242	25,816	26,848	5,263	2,879	47,352	109,393	112,588	79.9	76.7	27,601	14,071	9,773	12,867
Green Bay & Western	July	224	374	....	384	414	109	100	4	41	41	8	23	106	296	272	77.2	65.8	87	41	17	42
	7 mos.	224	2,482	....	2,524	2,643	591	568	28	306	281	55	161	729	1,910	1,736	75.8	65.6	614	282	161	304
Gulf Mobile & Ohio	July	2,758	5,763	378	6,589	7,866	1,018	1,327	74	1,283	1,443	283	269	2,098	5,026	5,697	76.3	72.4	1,563	681	651	844
	7 mos.	2,762	41,867	2,360	47,510	54,666	6,978	8,254	501	9,327	9,805	1,950	1,938	14,880	35,650	38,022	75.0	69.6	11,861	4,811	4,855	6,627
Illinois Central	July	6,537	18,308	1,897	22,393	25,376	3,699	4,064	393	3,538	3,651	745	523	8,377	17,173	18,091	76.7	71.3	5,219	2,814	1,981	2,851
	7 mos.	6,537	130,290	12,175	158,952	176,546	24,957	27,043	2,721	28,348	28,709	4,917	3,747	59,567	123,912	128,754	78.0	72.9	35,040	19,005	12,696	18,010
Illinois Terminal	July	355	778	53	931	1,152	147	183	23	157	191	42	43	381	785	886	84.4	76.9	146	62	51	110
	7 mos.	355	5,194	382	6,183	7,299	980	1,129	175	1,081	1,266	293	317	2,580	5,381	5,874	87.0	80.5	801	387	321	652
Kansas City Southern	July	891	3,004	107	3,423	3,863	319	604	36	370	588	92	88	1,066	1,964	2,608	57.4	67.5	1,459	628	647	569
	7 mos.	891	21,083	790	24,232	28,577	2,407	3,487	253	2,697	3,560	632	661	7,365	14,009	16,803	57.8	58.8	10,223	4,494	4,369	4,974
Kansas, Oklahoma & Gulf	July	327	440	....	443	570	70	107	8	37	65	11	28	115	270	348	61.0	61.0	173	76	67	86
	7 mos.	327	2,974	3	2,992	4,103	431	635	52	256	278	79	198	811	1,843	2,147	61.6	52.3	1,148	480	438	766
Lake Superior & Ishpeming	July	156	437	....	536	684	61	65	13	52	54	16	2	102	230	257	42.9	37.6	306	85	226	222
	7 mos.	156	1,505	....	1,832	2,615	420	412	93	432	413	111	14	495	1,438	1,553	79.0	59.4	394	242	243	591
Lehigh & Hudson River	July	96	261	....	261	288	37	44	2	30	27	8	14	86	178	187	68.0	65.0	84	31	29	37
	7 mos.	96	1,890	....	1,894	1,999	278	291	17	217	208	59	95	619	1,290	1,275	68.1	63.8	604	221	196	260
Lehigh & New England	July	180	547	....	552	740	91	90	13	129	143	40	13	187	473	517	85.7	69.8	79	55	78	139
	7 mos.	180	3,815	....	3,849	4,450	557	608	52	985	903	278	92	1,352	3,268	3,272	84.9	73.5	581	418	565	837
Lehigh Valley	July	1,163	4,828	327	5,412	6,683	900	931	95	882	1,111	208	137	2,413	4,579	5,057	84.6	75.7	833	333	329	933
	7 mos.	1,163	33,164	2,038	37,339	44,748	5,681	5,836	654	6,240	7,572	1,448	961	16,366	30,998	33,408	83.0	74.7	6,342	2,618	2,610	6,134
Long Island	July	360	1,043	3,630	‡ 4,906	‡ 4,995	‡ 593	‡ 641	91	958	925	125	13	2,452	4,192	4,027	85.4	80.6	714	358	68	916
	7 mos.	360	7,441	22,282	31,327	32,509	4,700	4,559	647	6,545	6,240	874	105	16,863	29,426	27,887	93.9	85.8	1,901	2,511	—2,657	5

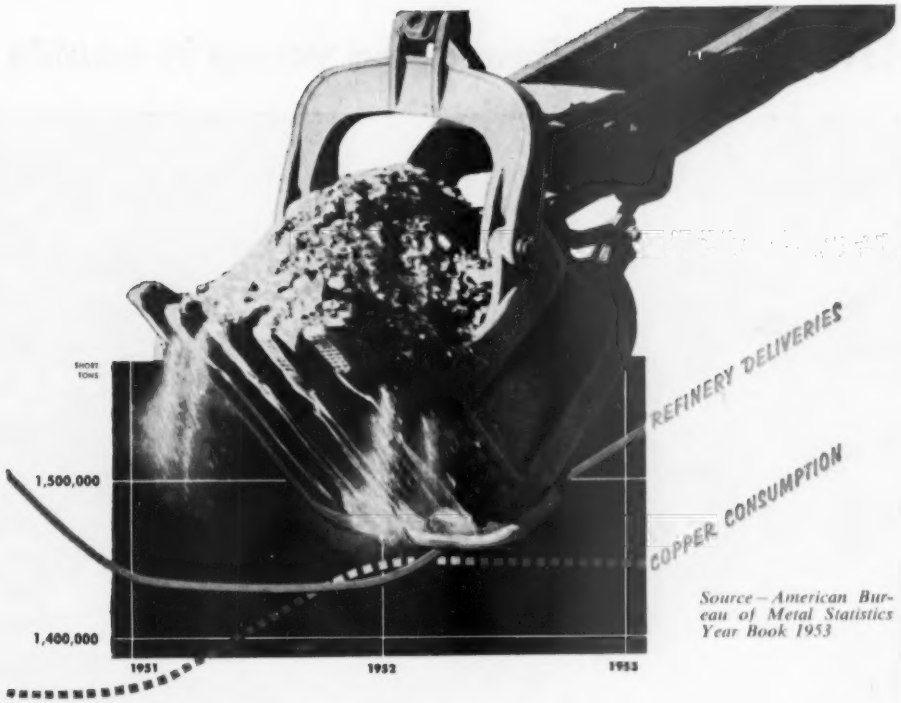
REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total	Maint. Way and Structures: Deprec. and Retirements	Maint. Equipment: Total	Maint. Equipment: Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Louisiana & Arkansas	July	752	1,818	48	1,955	2,594	243	427	19	266	315	88	71	628	1,286	1,545	65.8	59.5	669	270	344	536
	7 mos.	752	14,064	382	15,043	17,667	1,942	2,710	153	1,858	1,983	618	530	4,155	9,047	10,133	60.1	57.4	5,996	2,463	3,064	3,683
Louisville & Nashville	July	4,737	12,324	1,122	14,510	19,592	2,539	2,768	227	3,590	4,002	946	342	6,169	13,294	14,452	91.6	73.8	1,216	682	1,235	2,822
	7 mos.	4,734	99,084	6,539	114,146	138,369	19,810	19,138	1,584	26,313	27,095	6,567	2,424	42,219	95,334	99,105	83.5	71.6	18,812	9,943	12,918	20,047
Maine Central	July	944	1,496	141	1,789	1,933	477	479	25	391	365	77	21	750	1,735	1,678	97.0	86.8	54 Cr.	4	46	133
	7 mos.	944	13,006	752	14,831	15,280	3,068	3,253	191	2,779	2,504	536	145	5,210	11,849	11,731	79.9	76.8	2,982	1,202	1,150	1,502
Midland Valley	July	334	172	....	175	216	33	51	5	11	18	4	5	57	114	143	65.4	66.2	60	23	19	23
	7 mos.	334	1,155	....	1,176	1,431	272	315	37	78	107	27	38	370	818	924	69.6	64.6	358	150	129	168
Minneapolis & St. Louis	July	1,397	1,542	9	1,615	1,881	296	374	26	275	277	76	101	593	1,354	1,497	83.9	79.6	260	164	121	143
	7 mos.	1,397	11,132	32	11,615	12,490	1,976	2,323	199	1,879	1,853	537	757	4,016	9,398	9,910	80.9	79.3	2,217	1,098	1,129	1,052
Minn., St. Paul & S. Ste. Marie	July	3,222	3,588	161	3,928	4,016	759	845	52	615	693	102	89	1,364	2,982	3,174	75.9	79.0	945	246	667	558
	7 mos.	3,222	19,308	603	21,166	22,172	4,807	5,307	346	4,408	4,694	703	561	8,558	19,262	20,392	91.0	92.0	1,905	1,484	382	79
Mississippi Central	July	148	186	....	190	220	55	58	2	25	52	6	13	49	151	186	79.4	84.7	30	13	17	35
	7 mos.	148	1,360	....	1,387	1,639	431	378	18	190	229	42	96	353	1,143	1,204	82.4	73.5	244	83	96	173
Missouri Illinois	July	172	430	....	432	529	67	74	4	63	70	26	8	106	258	287	59.6	54.2	175	26	151	87
	7 mos.	172	2,938	1	2,959	3,503	526	537	27	559	530	187	67	785	2,013	2,039	68.0	58.2	946	436	537	635
Missouri-Kansas-Texas	July	3,241	5,551	282	6,374	7,547	807	1,231	94	927	1,178	239	259	2,404	4,697	5,479	73.7	72.6	1,677	540	708	842
	7 mos.	3,241	36,906	1,853	42,769	51,424	6,235	7,571	699	6,557	7,783	1,670	1,730	16,623	33,294	36,620	77.8	71.2	9,476	2,753	4,034	5,939
Missouri Pacific	July	6,928	15,921	1,065	18,604	22,120	3,037	3,925	311	3,156	4,186	813	474	6,699	14,079	16,711	75.7	75.5	4,525	1,051	2,788	2,779
	7 mos.	6,923	101,735	5,904	122,447	141,862	21,020	26,194	2,002	22,460	27,783	5,574	3,365	47,132	98,641	112,626	80.6	79.4	23,806	6,981	11,875	15,436
International Great Northern	July	1,103	2,184	167	2,569	3,148	491	659	33	482	605	123	62	1,134	2,297	2,720	89.4	86.4	272	87	140	347
	7 mos.	1,103	16,010	989	18,532	22,920	3,530	5,001	252	3,309	4,017	823	431	7,779	15,890	18,838	85.7	82.2	2,642	759	1,441	2,377
Gulf Coast Lines	July	1,724	2,988	105	3,317	3,538	685	825	72	507	556	103	94	1,177	2,617	2,828	78.8	79.9	700	Cr. 1	523	439
	7 mos.	1,724	22,247	534	24,304	26,463	4,829	5,967	385	3,601	3,805	756	648	8,180	18,292	19,729	75.2	74.5	6,012	1,023	3,372	3,315
Monongahela	July	177	419	....	422	513	62	92	16	74	72	17	1	155	302	401	71.6	78.1	120	27	—8	—3
	7 mos.	177	244	....	3,268	4,262	447	910	114	431	497	95	5	1,165	2,109	3,086	64.5	72.4	1,159	190	162	....
Montour	July	51	83	....	84	187	12	33	2	43	69	18	1	48	112	175	133.5	93.5	—28	11	30	41
	7 mos.	51	934	....	1,003	1,479	106	218	17	362	540	129	7	379	921	1,318	91.8	89.1	82	280	324	308
Nashville, Chatt. & St. Louis	July	1,032	2,281	149	2,675	3,156	435	528	42	382	455	138	118	1,097	2,150	2,345	80.4	74.3	525	235	293	453
	7 mos.	1,032	17,815	929	21,065	23,570	3,415	3,594	296	2,846	3,495	958	819	7,834	15,756	16,798	74.8	71.3	5,309	2,387	2,633	3,413
New York Central	July	10,713	39,843	9,227	55,969	69,787	8,031	10,271	1,102	9,593	13,495	2,376	1,041	24,990	46,793	57,581	83.6	82.5	9,176	4,762	2,381	5,214
	7 mos.	10,713	297,055	61,491	411,616	485,192	58,930	66,396	7,172	82,030	98,117	16,664	7,633	188,057	360,193	400,605	87.5	82.6	51,423	32,278	5,348	35,434
Pittsburgh & Lake Erie	July	221	2,299	68	2,487	4,127	432	552	41	792	1,023	289	87	1,095	2,621	3,270	105.4	79.2	—134	99	497	1,132
	7 mos.	221	18,099	454	19,690	30,166	2,953	3,704	288	6,574	7,461	2,025	539	7,679	19,302	23,178	98.0	76.8	388	1,502	4,600	8,076
New York, Chicago & St. Louis	July	2,185	11,883	146	12,520	14,507	1,415	1,687	176	1,958	2,126	357	323	4,647	8,799	9,684	70.3	66.8	1,724	1,874	1,425	1,948
	7 mos.	2,185	79,055	1,036	82,813	97,704	9,608	11,731	1,070	13,809	15,362	2,444	2,224	30,482	59,258	66,066	71.6	67.6	23,555	11,617	9,492	13,000
New York, New Haven & Hartford	July	1,769	6,745	4,560	12,572	13,592	1,429	1,957	243	1,836	2,060	417	198	5,453	9,698	10,946	77.1	80.5	2,875	880	1,223	729
	7 mos.	1,770	43,899	38,761	87,787	95,700	12,377	15,583	1,901	13,206	14,081	2,821	1,261	39,066	71,369	76,824	81.3	80.3	16,417	6,170	3,480	5,340
New York Connecting	July	21	213	....	222	264	90	119	25	21	21	....	....	80	195	226	87.9	85.4	27	82	—48	—31
	7 mos.	21	1,923	....	2,071	2,478	621	582	176	136	188	....	....	581	1,360	1,446	65.7	58.4	710	590	103	493
New York, Ontario & Western	July	541	480	....	494	623	129	164	17	83	88	23	24	248	514	596	104.1	95.6	—20	35	—136	—94
	7 mos.	541	3,427	....	3,521	4,174	855	872	126	622	621	158	164	1,779	3,632	3,722	103.1	89.2	—110	255	—883	—290
New York, Susquehanna & Western	July	120	376	40	437	481	48	52	13	52	59	12	11	220	358	353	81.9	73.5	79	34	—8	43
	7 mos.	120	2,905	267	3,310	3,389	354	398	45	440	422	87	57	1,526	2,575	2,512	77.8	74.1	735	235	124	314
Norfolk & Western	July	2,135	11,933	398	12,929	15,498	2,239	2,324	329	2,930	3,396	675	318	4,238	10,361	11,276	80.1	72.8	2,568	1,891	1,406	2,130
	7 mos.	2,135	87,916	2,393	94,824	107,705	15,330	16,115	2,202	21,772	23,758	4,707	2,283	31,139	74,885	79,760	79.0	74.1	19,938	14,066	10,435	13,802
Norfolk Southern	July	612	759	....	769	911	177	204	14	126	119	28	49	257	661	695	86.0	76.3	108	49	27	71
	7 mos.	619	5,544	....	5,618	6,372	1,254	1,423	91	854	847	194	349	1,775	4,635	4,986	82.5	78.2	984	425	297	431
Northern Pacific	July	6,866	12,849	881	14,871	16,768	2,058	3,221	232	2,573	3,070	462	338	5,819	11,574	13,462	77.8	80.3	3,297	1,188	2,490	1,625
	7 mos.	6,866	81,796	3,965	93,478	102,575	16,045	18,398	1,819	19,530	19,613	3,200	2,319	39,780	82,827	85,002	88.6	82.9	10,651	8,298	4,551	8,400
Northwestern Pacific	July	331	1,220	4	1,255	1,149	289	332	17	101	125	4	6	393	813	858	64.8	74.6	442	168	113	125
	7 mos.	331	7,456	23	7,666	7,683	2,165	2,191	145	677	745	29	39	2,502	5,535	5,870	72.2	76.4	2,131	697	316	381
Oklahoma City, Ada, Atoka	July	132	66	....	67	80	18	17	4	1	1	....	2	21	47	46	69.8	57.0	20	7	3	9
	7 mos.	132	770	....	778	636	145	150	19	9	9	....	14	143	347	340	44.6	53.5	431	172	164	111
Pennsylvania	July	10,051	54,148	10,611	71,961	90,413	6,035	12,652	1,397	17,068	19,703	2,950	1,318	32,040	59,338	73,356	82.5	81.1	12,623	4,706	5,443	7,010
	7 mos.	10,051	367,385	74,870	495,749	612,824	57,718	81,127	10,057	109,717	134,746	20,789	8,734	224,514	421,790	502,274	85.1	82.0	73,960	34,834	22,517	49,833
Pennsylvania Reading Seashore Lines	July	358	549	362	942	1,102	217	224	43	110	103	22	15	576	988	988	104.9	89.6	—46	Cr. 107	—112	—162
	7 mos.	358	4,075	1,112	5,333	5,680	1,378	1,517	189	722	714	153	78	3,412	5,878	6,394	110.2	112.6	—545	614	—2,177	—2,405

(Continued on page 81)



Source—American Bureau of Metal Statistics Year Book 1953

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Foreword, U. S. Dept. of Commerce
B.D.S.A. Copper Quarterly, August 1954

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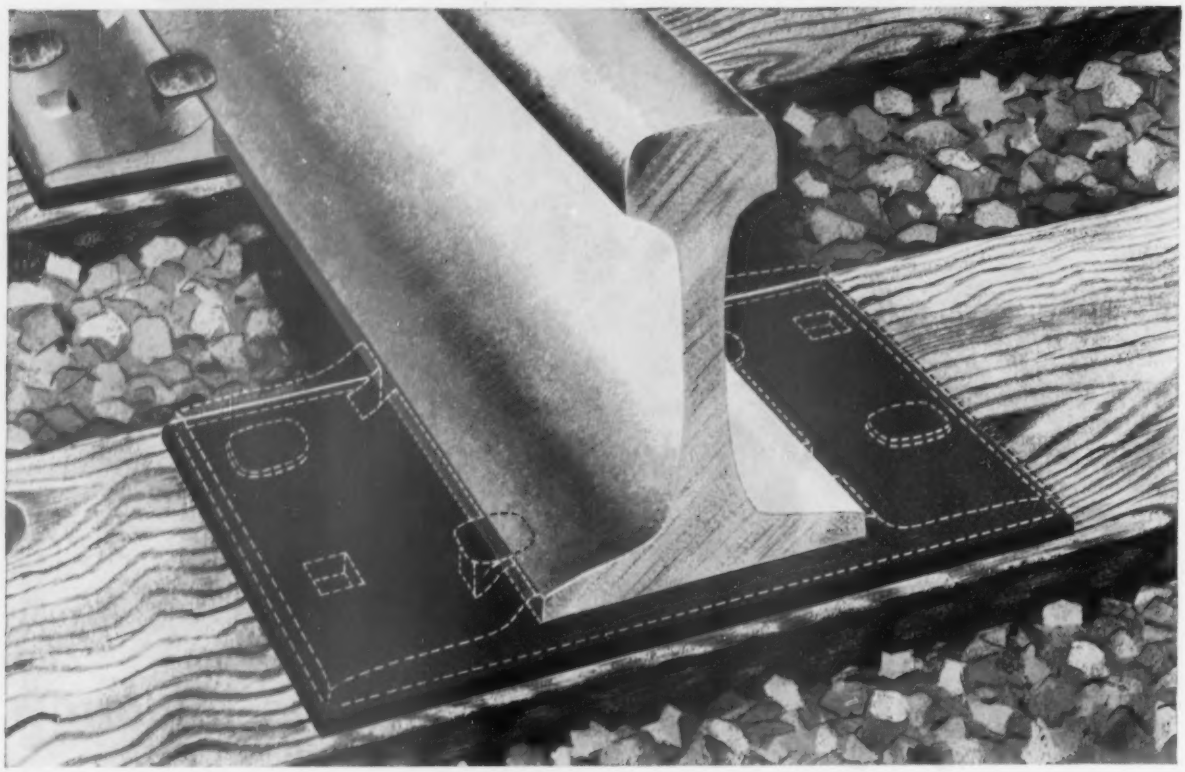
How to keep ties from dying young in trouble spots



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Johns-Manville 96 YEARS OF SERVICE TO TRANSPORTATION

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Pittsburgh & Shawmut	July	97	127	....	128	199	28	56	4	59	43	12	5	36	137	166	106.6	83.3	—8	5	16	54
	7 mos.	97	1,109	....	1,116	1,389	227	323	25	310	352	83	33	264	915	1,127	82.0	81.2	201	36	384	431
Pittsburgh & West Virginia	July	132	576	....	579	807	102	166	24	125	194	36	62	171	496	636	85.7	78.8	83	25	42	122
	7 mos.	132	4,175	....	4,197	5,461	677	931	164	857	1,264	253	432	1,173	3,394	4,110	80.9	75.3	803	174	558	869
Reading	July	1,305	7,006	521	8,140	10,867	1,101	1,897	189	1,712	2,152	432	164	3,544	6,924	8,653	85.1	79.6	1,216	376	889	1,390
	7 mos.	1,305	54,646	3,932	63,054	77,880	7,801	11,668	1,394	12,216	15,778	3,069	1,102	26,028	50,006	60,141	79.3	77.2	13,048	4,331	7,568	9,815
Richmond, Fredericksburg & Potomac	July	118	1,360	559	2,143	2,124	269	513	24	329	264	70	23	724	1,466	1,654	68.4	77.9	677	318	260	209
	7 mos.	118	10,031	3,720	15,882	16,801	2,093	2,809	179	2,351	2,077	490	156	5,223	10,764	11,242	67.8	66.9	5,118	2,266	1,870	1,981
Rutland	July	392	304	....	347	164	75	55	9	45	47	13	23	154	329	264	95.0	161.6	17	25	—29	—146
	7 mos.	392	2,326	—2	2,605	2,844	527	526	44	396	453	86	162	1,121	2,391	2,708	91.8	95.2	214	173	—141	—218
Sacramento Northern	July	265	205	....	211	673	62	69	4	19	14	3	2	69	163	179	77.4	26.5	48	19	12	249
	7 mos.	265	1,346	....	1,390	3,132	528	405	85	96	160	26	16	492	1,202	1,251	86.4	39.8	188	120	—60	1,025
St. Louis-San Francisco	July	4,601	8,210	489	9,439	10,722	1,459	1,704	141	1,660	1,786	527	368	3,807	7,818	8,397	82.8	78.3	1,620	796	880	1,065
	7 mos.	4,601	59,203	3,025	67,506	75,218	10,920	11,622	1,050	11,489	12,430	3,582	2,492	26,346	54,992	56,925	81.5	75.7	12,513	5,133	5,573	8,252
St. Louis-San Francisco & Texas	July	159	342	5	364	508	44	59	4	33	39	1	26	149	265	315	72.7	61.9	99	22	20	61
	7 mos.	159	2,543	28	2,714	3,246	305	433	37	232	273	8	182	1,068	1,868	2,095	68.8	64.5	846	303	219	315
St. Louis Southwestern Lines	July	1,562	4,581	25	4,784	6,100	641	1,079	52	573	771	107	174	1,603	3,208	3,888	67.1	63.7	1,576	657	653	888
	7 mos.	1,562	33,200	117	34,547	44,604	4,983	7,195	366	4,478	4,779	739	1,199	10,802	22,763	26,108	65.9	58.5	11,784	6,945	2,956	6,530
Seaboard Air Line	July	4,064	8,945	1,079	10,871	11,487	1,537	1,687	184	2,152	2,271	539	351	3,801	8,334	8,660	76.7	75.4	2,537	1,038	1,589	1,690
	7 mos.	4,076	75,099	7,597	90,099	96,812	13,887	15,292	1,287	16,009	16,747	3,730	2,517	29,444	65,420	68,788	72.6	71.1	24,679	9,314	13,406	14,579
Southern	July	6,286	16,361	1,555	19,425	22,500	2,889	2,978	258	3,528	4,257	787	435	6,673	14,568	15,661	75.0	69.6	4,857	2,282	2,333	3,227
	7 mos.	6,286	119,684	9,291	141,347	162,048	20,509	21,006	1,687	26,524	28,021	5,552	2,986	46,229	103,163	107,756	73.0	66.5	38,185	17,778	17,773	24,657
Alabama Great Southern	July	326	1,177	84	1,375	1,660	217	272	32	270	388	58	32	448	1,044	1,294	75.9	77.9	331	103	166	219
	7 mos.	326	8,642	454	10,069	11,894	1,552	1,674	212	1,946	2,450	423	231	3,080	7,315	8,308	72.7	69.9	2,754	1,105	1,371	1,700
Cinn., New Orleans & Texas Pacific	July	337	2,950	170	3,297	4,021	488	434	49	543	873	134	75	867	2,123	2,423	64.4	60.3	1,174	677	523	746
	7 mos.	337	22,028	1,129	24,680	28,621	3,384	3,067	300	4,206	5,758	917	504	6,278	15,381	17,097	62.3	59.7	9,299	5,076	4,072	5,275
Georgia Southern & Florida	July	397	562	71	695	786	222	169	12	61	59	6	19	223	569	530	81.8	67.5	126	41	—47	48
	7 mos.	397	4,574	537	5,666	5,964	1,343	1,147	64	467	514	45	139	1,852	4,114	3,571	72.6	59.9	1,552	279	104	534
New Orleans & Northeastern	July	203	936	52	1,039	1,306	135	159	20	137	136	42	19	227	575	608	55.4	46.5	463	264	198	255
	7 mos.	203	6,262	307	7,061	8,166	1,437	1,127	146	972	859	288	136	1,638	4,555	4,040	64.5	49.5	2,506	1,541	977	1,429
Southern Pacific	July	8,121	37,168	3,452	43,466	49,025	5,193	5,979	464	9,341	9,939	1,880	866	18,101	35,684	38,410	82.1	78.3	7,782	2,333	2,980	3,398
	7 mos.	8,120	245,174	19,836	284,139	324,903	34,703	38,890	3,443	60,587	65,883	12,959	5,887	114,255	229,487	246,230	80.8	75.8	54,652	24,651	21,806	28,570
Texas & New Orleans	July	4,288	8,982	627	10,253	11,916	2,226	2,094	142	1,475	1,617	150	274	4,177	8,734	8,975	85.2	75.3	1,520	387	186	718
	7 mos.	4,291	65,256	3,729	73,902	87,175	13,348	14,820	896	10,492	11,470	998	1,896	27,851	57,689	61,578	78.1	70.6	16,212	5,931	3,549	7,682
Spokane International	July	152	278	1	291	315	60	64	3	24	22	10	6	77	178	179	61.3	56.8	113	18	64	63
	7 mos.	152	1,802	5	1,895	1,966	387	418	16	176	157	67	38	501	1,183	1,154	62.4	58.7	712	185	350	395
Spokane, Portland & Seattle	July	944	2,160	106	2,408	2,768	284	397	44	420	419	114	33	834	1,668	1,750	69.3	63.2	740	178	433	555
	7 mos.	944	14,818	538	16,341	18,538	2,398	2,640	350	2,644	2,548	744	206	5,698	11,610	11,660	71.0	62.9	4,731	1,570	2,766	3,620
Tennessee Central	July	286	364	1	382	405	79	95	6	57	77	22	13	122	300	347	78.7	85.7	81	25	23	4
	7 mos.	286	2,429	10	2,581	3,006	534	663	39	408	478	157	86	871	2,072	2,390	80.3	79.5	508	167	102	188
Texas Northern	July	8	65	....	69	136	3	7	1	7	11	3	1	7	22	34	32.4	25.3	46	1	31	26
	7 mos.	8	483	....	509	893	28	34	2	58	54	18	7	58	185	211	36.4	23.6	324	8	195	206
Texas & Pacific	July	1,831	5,261	418	6,229	7,373	937	1,140	92	1,169	1,109	247	197	2,247	4,905	5,138	78.8	69.7	1,324	413	468	1,083
	7 mos.	1,832	39,233	2,362	45,379	51,477	7,391	7,265	647	7,607	8,174	1,704	1,405	15,200	34,077	35,046	75.1	68.1	11,301	3,922	4,749	7,377
Texas Mexican	July	161	132	....	146	283	61	54	5	28	38	10	10	64	183	183	125.5	64.7	—37	Cr. 31	—28	24
	7 mos.	161	1,481	....	1,577	2,036	372	396	42	195	231	68	62	436	1,204	1,289	76.4	63.3	373	137	82	244
Toledo, Peoria & Western	July	239	513	....	521	634	83	108	6	62	48	11	43	128	357	387	68.5	61.0	164	63	38	52
	7 mos.	239	4,016	....	4,082	4,541	669	785	47	403	332	78	315	923	2,574	2,653	63.1	58.4	1,508	642	468	614
Union Pacific	July	9,816	35,366	3,520	42,096	47,018	5,296	6,796	435	7,376	8,477	1,529	973	15,364	31,339	35,470	74.4	75.4	10,758	5,519	2,463	2,387
	7 mos.	9,817	228,481	18,270	267,583	297,825	33,724	42,908	3,255	50,405	57,640	10,031	7,315	97,551	203,679	229,248	76.1	77.0	63,904	38,070	14,463	14,462
Utah	July	99	66	....	66	95	12	20	2	30	40	9	1	25	75	99	114.3	103.6	—9	8	—22	5
	7 mos.	107	485	....	487	638	104	131	13	287	288	63	5	199	647	722	133.1	113.2	—161	62	—202	—65
Virginian	July	611	2,771	2	2,883	2,899	403	411	60	720	758	202	45	661	1,918	2,079	66.5	71.7	965	441	702	504
	7 mos.	611	19,832	9	20,563	21,933	2,943	3,043	438	4,505	5,069	1,343	318	4,922	13,326	14,550	64.8	66.3	7,237	4,125	4,275	4,088
Wabash	July	2,393	8,234	456	9,403	10,831	1,238	1,384	256	1,196	1,359	363	302	3,937	7,093	7,729	75.4	71.4	2,310	793	883	1,237
	7 mos.	2,393	55,664	2,631	63,374	69,793	8,457	9,008	964	9,833	9,046	2,528	2,153	26,849	50,106	51,206	79.1	73.4	13,268	4,203	4,662	7,616
Ann Arbor	July	294	690	....	734	821	106	109	7	133	122	31	32	336	631	631	86.0	76.8	103	37	38	80
	7 mos.	294	4,967	....	5,064	5,422	673	718	50	931	845	212	204	2,288	4,243	4,041	83.8	74.5	821	296	302	615
Western Maryland	July	857	2,746	4	3,021	3,966	411	601	51	650	706	218	97	1,080	2,437	2,741	80.7	69.1	584	281	517	812
	7 mos.	857	22,597	26	24,043	29,533	3,360	3,751	385	4,586	4,971	1,517	676	7,867	17,827	19,225	74.1	65.1	6,216	3,015	4,394	6,041
Western Pacific	July	1,193	3,540	298	3,930	4,681	659	842	74	683	778	178	179	1,382	3,149	3,581	80.1	76.5	781	260	474	487
	7 mos.	1,193	24,990	1,493	27,113	34,693	4,979	6,004	572	4,508	4,692	1,198	1,310	8,986	21,452	23,669	79.1	68.2	5,661	2,529	2,804	4,634
Wisconsin Central	July	1,042	2,309	87	2,573	2,858	609	508	36	404	441	77	74	1,007	2,214	2,196	86.0	76.8	360	143	106	304
	7 mos.	1,042	15,517	289	16,795	19,056	2,737	2,757	268	2,879	3,089	538	501	6,836	13,711	14,365	81.6	75.4	3,084	847	1,304	1,949

Current Publications

PERIODICAL ARTICLES

THEY'VE BEEN WORKING ON THE RAILROADS, by W. A. Powers. Town & Country, August 1954, page 70 et seq. Hearst Corporation, 572 Madison ave., New York 22. Single copies, 75¢

A review of passenger train and service improvements since 1934 and the days of the "Pioneer Zephyr." In the same issue, Lucius Beebe describes the luxurious private cars which are now almost a thing of the past. His article is entitled "Private Varnish." In a section titled "The Trend to Trains," women's fashions are set against backgrounds of such plush trains as the "20th Century" and "Merchants Limited."

BOOKS

FROM MINE TO MARKET; THE HISTORY OF COAL TRANSPORTATION ON THE NORFOLK & WESTERN RAILWAY, by Joseph T. Lambie. 380 pages, illustrations, maps. New York University Press, Washington sq., New York 3. $6.

This is the story of the emergence of the N&W as a coal carrier; the story of the development of the now famous Pocahontas coal fields in western Virginia and southern West Virginia; the story of the relations between railroad and coal producers that made that development possible; the story of the competitive struggle between the N&W and its more northerly rivals to share the markets for bituminous coal. It involves an account of the building and acquisition of new lines and terminals; the integration and reorganization of the corporation; problems of coal car supply for the mines, and of coal land ownership by the railway company; conflict and compromise between the N&W and its competitors; the conquest of new markets; and changing patterns of traffic flow.

Dr. Lambie, after retracing the origins and early vicissitudes of the company, keeps steadily before the reader's eye the characteristic problems of operating such a living business entity as a regional railroad. The crucial event in the entire history was, of course, the act of imagination whereby the management staked the whole future of the road on the rapid development of the West Virginia and neighboring bituminous deposits and on the haulage of Pocahontas coal. From this decision in the early 1880's sprang all the salient developments here chronicled.

The book is not a complete history of the company in all its aspects. Finance, labor, administration, personnel policy, and technological development are treated only in so far as they bear directly on traffic, and Dr. Lambie concludes his preface with the statement: "It is precisely this railway's devotion to coal traffic that makes it a unique and interesting study." The closing chapter is concerned with the future effects of new sources of energy, including atomic, on coal-producing and coal-carrying industries.

•

HANDBOOK OF INDUSTRIAL SAFETY STANDARDS, revised edition. 315 pages, illustrations, tables. Association of Casualty & Surety Companies, 60 John st., New York 38. $1.40. Also available from member companies.

Encompassing 38 chapters and four appendices, the handbook is a concise but comprehensive compilation of industrial safety requirements recommended by nationally recognized authorities, including the American Standards Association, the National Fire Protection Association, the American Society of Mechanical Engineers and various governmental organizations. However, much of the text material is an amplification and extension of the various codes on which it is based, and some sections deal entirely with topics not covered by any existing standards.

The subject matter runs the gamut of industrial safety topics, including safety programs, accident investigation, materials handling, boilers and unfired pressure vessels, machine guarding, il-

News from Mink-Dayton
117 N. Findlay St. P. O. Box 42—Station A, Dayton, Ohio

MINK-DAYTON CABOOSE HEATER OFFERS MORE ADVANTAGES

E. W. Mink, president of Mink-Dayton, Inc., in an interview recently, pointed out many advantages in the firm's new, improved caboose heater. "We have designed and built a heater which will help all railroads improve heating conditions in Cabooses, all types of Work Cars, Shanties and out of way places," Mr. Mink said. The Dayton, Ohio firm manufactures Railroad Specialties, including Heating, Lighting, Plumbing, Water Coolers and Interior Fittings.

E. W. MINK

Among the important improvements made in the Mink-Dayton Caboose Heater are:

1. Rugged—especially designed for caboose service without excess weight. (Weight is only 105 lbs. for model No. 23 shown.)
2. Heater can be mounted anywhere in caboose. No leveling device is required. The heater will burn even if car is parked on a curve.
3. Burner is silent with no blast or popping.
4. In high-draft conditions the Mink-Dayton caboose heater is not critical, with the use of standard barometric draft regulator.
5. Heavy gauge sheet metal construction vs. cast iron construction in other types of heaters.
6. Impact shock does not affect operation, even at low pilot heat.
7. Model No. 23 conservatively rated at 50,000 B.T.U's. Model No. 26—75,000 B.T.U.'s. High Thermal efficiency of the units at these ratings insure low fuel consumption. (By actual laboratory tests Model No. 23 burns ½ gallon fuel per hour maximum and Model No. 26 ¾ gallons maximum)
8. Recessed top for simple cooking.

Mr. Mink stated that The Mink-Dayton Heater has been tested and approved under actual road operating conditions by many leading railroads. Additional information will be sent on request.

lumination, exhaust systems, electrical equipment, spray coating, tank operations, building exits and prevention of "off-the-job" accidents. Completely new chapters have been added on welding and cutting, storage and handling of flammable liquids, radiation hazards and disaster control. Included in the appendices are an index to American Safety Standards, a table of maximum allowable concentrations of toxic substances, and a classification of fire extinguishing appliances. To lend greater facility to its use, there has been included at the end of most chapters a reference list naming the safety codes which are especially applicable to the subject matter of the chapter.

•

DICTIONARY OF BUSINESS AND INDUSTRY, compiled and edited by Robert J. Schwartz. 561 pages. B. C. Forbes & Sons Publishing Co., 80 Fifth ave., New York 11. $7.95; with thumb index, $8.95.

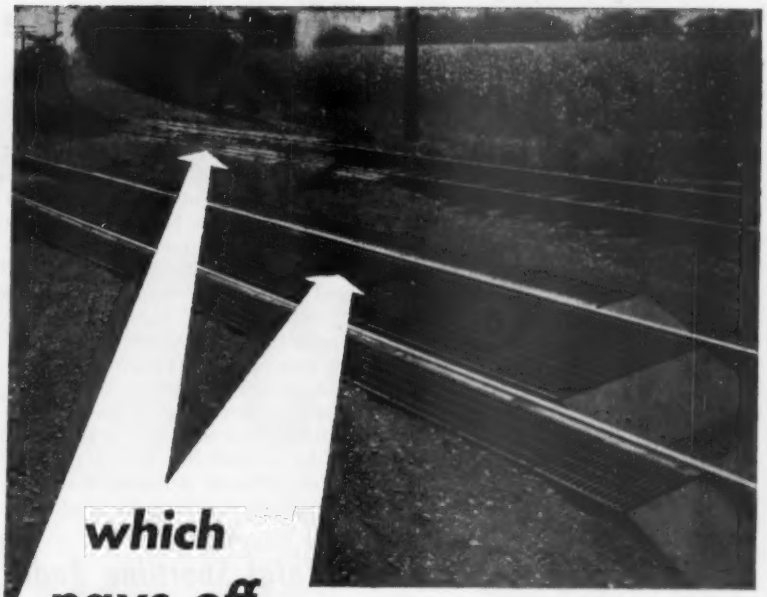
Some 45,000 business and legal terms are defined and explained in this dictionary. It contains trade names, such as dacron and orlon; trade terms such as bird-nesting, Q-factor and layboy; trade abbreviations such as C.W.O., MUF and VI, and legal terms such as habendum. In addition, it contains 36 pages of time-saving charts and tables listing coins and notes of the world, foreign weights and measures, weights of materials, foreign trade definitions, conversion factors, etc.

•

ABSTRACTS OF SUPREME COURT DECISIONS INTERPRETING THE INTERSTATE COMMERCE ACT. 297 pages. Association of ICC Practitioners, 2218 ICC building, Washington 25, D.C. $5.

In May 1951, the Association of Interstate Commerce Commission Practitioners published a list of 256 U. S. Supreme Court decisions. Among them were 172 important to the ICC, including the 100 then most frequently cited by the commission, as compiled in 1939 by H. D. McCoy, assistant chief examiner, and E. M. Reidy, chief counsel of the ICC. Also included, as well as abstracted, were 39 important decisions since 1939.

This book contains abstracts of those 256 decisions and of 30 other cases deemed of interest, decided since the previous compilation was made. In so far as possible, abstracts have been arranged in accordance with the section of the Interstate Commerce Act to which the main point of decision is related. In many instances where two or more important points were decided in one case, the case is completely abstracted under the section covering what is considered the main point and excerpts are included under other sections pertaining to subsidiary questions.



which pays off

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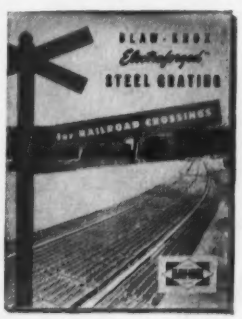
in less track maintenance and more public goodwill?

You can readily judge which pays off—when you compare the beaten up, old-fashioned wood crossing with the smooth, modern steel crossing, which will last as long or longer than the rails.



To get more complete information, write for your copy of new Bulletin No. 2448 . . . or send your dimensional sketches for a quotation.

GRATING APPLICATIONS
crossings • walkways • running boards • steps • tower platforms • fan guards • shelving • floors • catwalks • stair treads • and many other uses for versatile steel grating

CROSSINGS OF BLAW-KNOX ELECTROFORGED® STEEL GRATING

—are easily installed and maintained—takes only two men to remove sections for tamping tracks, cleaning ballast, renewing ties

—provide good drainage, permit quick evaporation of snow and water, are easily kept clean

—stand wear and tear of vehicle traffic

—provide quiet, smooth crossing for trains

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Distributor—East of Rocky Mountains
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BLAW-KNOX EQUIPMENT DIVISION
RAILWAY EQUIPMENT DEPARTMENT

Motorola does it again

The Northeast Oklahoma Railroad, 73 miles of very busy shortline, carries some 780 cars daily over its trackage.

Faced with the need of improving its communications, the N. E. O. in 1952 replaced its company-owned telephone system with its new company-owned Motorola 2-way Radio System. The wisdom of N. E. O.'s choice is now backed by two years of highly profitable experience.

Motorola, as a ruggedly reliable railroad tool, delivered many unexpected benefits up and down the line, crew to dispatcher contacts at any point without stopping the trains and walking to phone booths; reports or instructions given quickly on the run; intelligence such as track or equipment status; break-down or repair calls . . . valuable time gained in all such cases made substantial savings that twice paid for the radios in a few months. (N. E. O. figures 30 minutes per train crew per 8 hour day). Those are savings not to be overlooked on any railroad. So better phone, wire, or write:

R. F. McCALL

Motorola Communications & Electronics, Inc.
A SUBSIDIARY OF MOTOROLA, INC.

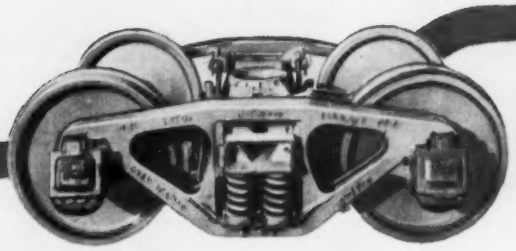
4501 Augusta Blvd., Chicago 51, Illinois
Telephone—SPaulding 2-6500

Total Shortline Radio Communications with no Wires to Maintain

national Motorola RADIO COMMUNICATIONS service

2-Way Railroad Radio

CAR MEN'S CHOICE



BECAUSE...

First of all, the men in the car department are cost-conscious. Maintenance is money! They compare. They see Barber Stabilized Trucks dismantled, serviced and assembled in a *fraction* of the time ...easily, quickly, without special tools or additional helpers. Their first-hand observation tells them, too, when a Barber Truck finally requires attention, that this simply-designed device has been doing a good job of stabilizing freight car rides, with the fewest possible sturdy parts. Naturally, Barber is the car men's choice! Standard Car Truck Company, 332 S. Michigan Avenue, Chicago 4, Illinois.

QUICKEST

EASIEST

- DISMANTLING
- SERVICING
- ASSEMBLING

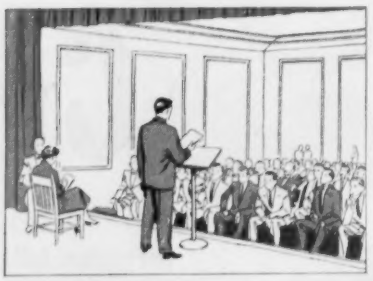
Two men, in 15 minutes, can raise the bolster from the springs and instantly release the Stabilizer parts for removal!

BARBER
STABILIZED TRUCKS

5 BILLION MILES PER YEAR of smooth, trouble-free service provided by... 350,000 CAR SETS of Barber Stabilized Trucks now in operation with... OVER 100 MAJOR RAILROADS and private car lines.

TO SHIPPERS

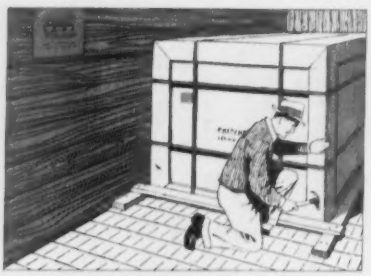
. . . this stencil is one more sign of railroad progress



The availability of freight cars is of great concern to both railroads and shippers. As Shippers' Advisory Boards point out, most car rejections are the result of inadequate car flooring.

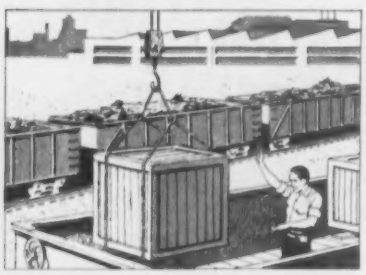
While steel found more and more uses in freight car design over the years, wood floors with their *nallability* were essential to the security of finished freight, so they remained in use.

Railroads attempt to keep floors in good condition. But they face rising labor costs and loss of revenue during repairs. The positive solution: N-S-F—NAILABLE STEEL FLOORING.

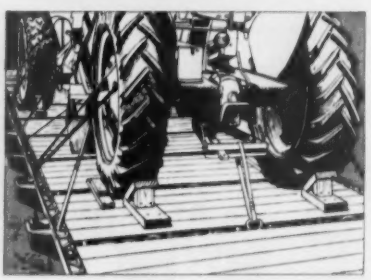


With its unique nailing groove, NAILABLE STEEL FLOORING takes ordinary nails—clinches them firmly in place. This makes it possible to block finished freight by standard methods.

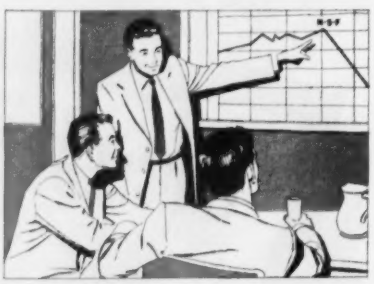
At the same time, N-S-F eliminates breakthrough of mechanical loading devices. And —like no other car floor—it adds strength at critical points of the car structure.



In gondolas, NAILABLE STEEL FLOORING improves car supply and reduces operating costs. It carries rough freight one way—is available to carry blocked finished freight on the return trip.



For flatcars, N-S-F offers improved load security. Tie-down straps or wires can be fastened to Multi-Position Holddown Fixtures supplemented by regular blocking nailed to the floor.



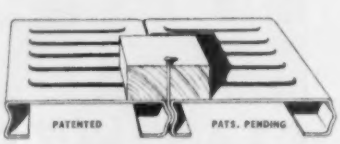
Records show that maintenance and operating costs drop sharply when N-S-F is applied. It soon recovers its higher initial cost, then begins to pay dividends on the investment.

COMPLETE engineering and cost data available from Great Lakes Steel Corporation, Steel Floor Division, Ecorse, Detroit 29, Michigan. Sales representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal, and New York.

GREAT LAKES STEEL CORPORATION

NATIONAL STEEL CORPORATION

N-SF-1



N-S-F is made of low alloy N-A-X HIGH-TENSILE steel—remarkably strong, corrosion-resistant —formed into channels, and welded together to form a unique nailing groove. Nails are clinched in a tight grip of steel, yet can be readily removed.

NAILABLE STEEL FLOORING

PAVES THE WAY TO THE ALL-STEEL FREIGHT CAR

on 14 New CNR Passenger Cars Waukesha Enginators supply all electric energy... for all services

On 14 new passenger cars—dinette, and buffet-lounge-sleeper units built by Pullman-Standard Car Manufacturing Company—to operate over the entire 24,000 mile system of the Canadian National Railway...

Waukesha Diesel Enginators supply all electric energy . . . for all services —air conditioning...lighting...cooking...refrigeration . . . and any other electric requirement.

Always available...completely reliable... Waukesha Enginator has the constant, full capacity to meet continual and heavy demands for electric service...without interruption and under all operating conditions—any time, anywhere.

A Complete Power Package—this Diesel engine and alternator unit is the Waukesha 33.75 KVA, 220-volt, 3-phase AC Diesel Enginator. It is a complete, compact, self-contained unit, assembled in a steel chassis, suspended by cushion mounting (rubber in shear) from tubular tracks attached to car frame ...easily withdrawn for routine inspection, servicing or exchange. Inner car mounting is also available. The Waukesha heavy-duty, railway-type full Diesel engine drives the alternator through a fluid drive coupling. Send for Bulletins.

WAUKESHA Diesel ENGINATOR®

Millions of Miles of Built-In Experience on More than 40 Major American Railroads

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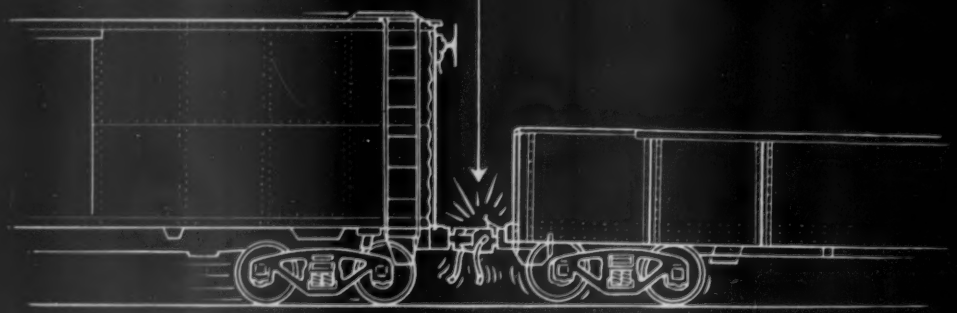
RAILWAY DIVISION **WAUKESHA MOTOR COMPANY** WAUKESHA, WIS.

Largest Builders of mobile engine-driven Refrigeration and Generator Equipment

Post-Graduate of the School of HARD SHOCKS



After Years of HUMP TESTING!!!

One of the earliest gears to be certified by the A.A.R., Westinghouse Friction Draft Gears have continued as one of railroading's most useful appliances during these years. Through the toughest of road service they have taken humping, bumping . . . literally billions of severe shocks and impacts, and have gone on saving valuable rolling stock, reducing damage claims. The Westinghouse Draft Gear's good and basic principle has been subjected to progressive design improvements. Its A.A.R. Certificate was later re-issued to cover these improvements . . . and research is still continuing. It always has been, always will be, the aim of Cardwell Westinghouse to build the best, most practical draft gears modern engineering can devise.

Cardwell Westinghouse Co., Chicago
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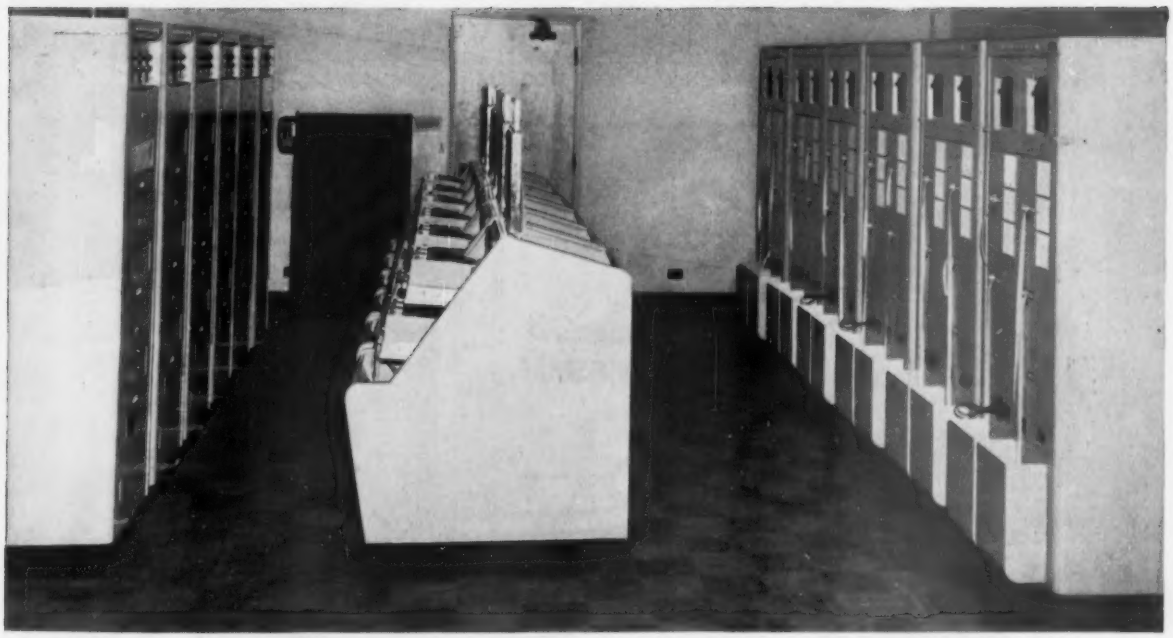
Specify
CARDWELL
WESTINGHOUSE

Westinghouse
FRICTION DRAFT GEAR
Type NY-11-F
Certified A.A.R.

• Cardwell Draft Gears • Westinghouse Draft Gears • Cardwell Friction Bolster Springs •



Bank of six "torn-tape" units. Each unit consists of monitor, transmitter and receiver, arranged to handle three incoming and three outgoing lines.

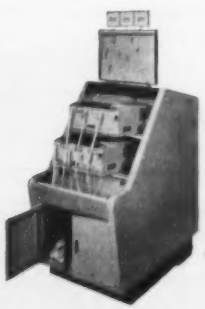
Compact new "torn-tape" units streamline message centers

"Torn-tape" is simply packaged equipment that enables you to apply assembly line efficiency to volume message relaying. Now re-designed by Teletype, the equipment is more compact, more easily installed and operated than ever before.

Receivers, transmitters (and monitors, when desired) are arranged in rows so that there is a separate aisle for receiving and transmitting attendants. Thus, by breaking down the relaying operations, unskilled personnel soon become specialists.

Each "torn-tape" unit is complete in itself —down to the power supply. Installation is virtually on a plug-in basis. A station may be set up . . . enlarged . . . moved . . . without disrupting the remaining operations of the message center. The equipment is maintained by regular printing telegraph personnel.

Receiver has extra positions, could accommodate six reperforators.



Transmitter is a good working height, has generous tape accommodations.

Monitor provides a record in storable form of all messages relayed by the center.

Many more new features have been added to the "torn-tape" equipment since it was first introduced several years ago. We'd be happy to give you complete information. Write to Teletype Corporation, 1400 Wrightwood Ave., Chicago 14, Illinois.

TELETYPE
CORPORATION
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Western Electric Company

SAVINGS ... on your side!

LOW CONDUCTIVITY . . . Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity —.25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT . . . Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT . . . Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL . . . Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE . . . STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings available.

HIGH SALVAGE VALUE . . . The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

. . . because TIME has yet to destroy or impair the high insulating efficiency of STREAMLITE HAIRINSUL.

Even after 20 or more years of service, STREAMLITE HAIRINSUL has been removed from refrigerator cars and reused in new cars without need for further processing or renovating.

STREAMLITE HAIRINSUL, the all-hair insulation that actually weighs 40% less and gives so much more in efficiency and economy is a one-time investment.

At left are still more reasons why leading car builders demand STREAMLITE HAIRINSUL. Write for complete data.

Write to:
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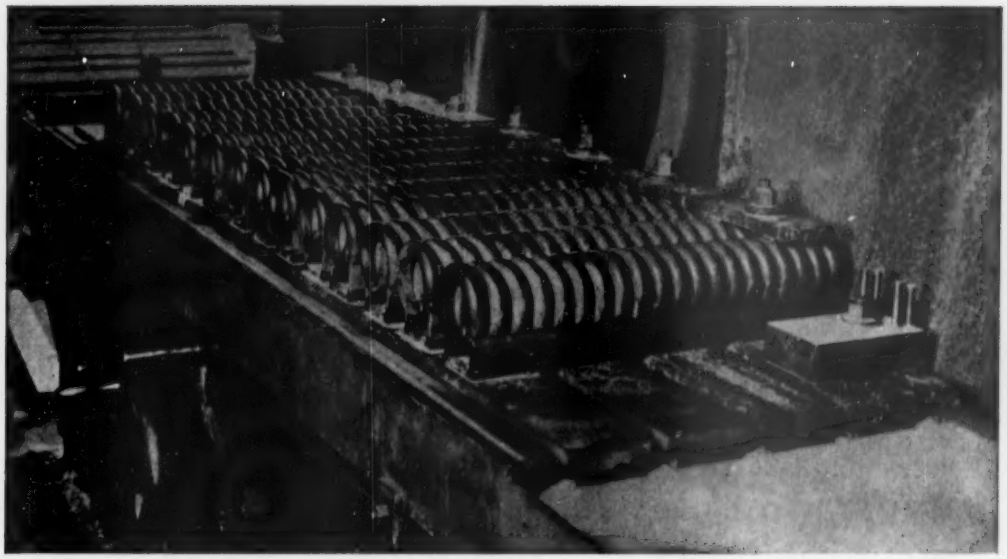
Streamlite
AMERICAN HAIR & FELT CO.
HAIRINSUL

SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED



Coiled Springs of "8600" Series Nickel Alloyed Steel. Increasing use of this nickel - chromium - molybdenum composition in railroad applications attests to the advantages it provides. Photo courtesy of American Steel Foundries, Chicago, Ill.

Type "8600" Nickel Alloy Steel

Extends Life of Heavy-Duty Railroad Springs

For longer life in coil and leaf springs for locomotives and cars investigate the "8600" series (ASTM-A332) nickel alloy steel.

Consider the remarkable advantages this steel offers you for all types of heavy-duty coil spring applications:

SUPERIOR SURFACE QUALITIES
EXCELLENT ELASTIC STRENGTH
GOOD IMPACT RESISTANCE
LESS DECARBURIZATION
EXTENDED FATIGUE LIFE

In Diesel locomotives both the coil and leaf springs of the "8600" type have given long trouble-free life. These nickel alloy steel springs are also used to provide the desired smooth riding characteristics required in modern passenger car coil springs as well as long travel inner springs under freight cars.

Nickel alloyed steels and irons are giving excellent results in all sorts of railroad applications. Upon request we shall gladly furnish you with counsel and data regarding appropriate nickel alloys for your requirements.

A revised edition of "NICKEL ALLOYS IN RAILROAD EQUIPMENT" is now available. Write for your copy today.

The International Nickel Company, Inc.
Dept. 20, 67 Wall Street
New York 5, N. Y.

Please send me booklet entitled "NICKEL ALLOYS IN RAILROAD EQUIPMENT."

Name_____

Title_____

Company_____

Address_____

City_____ State_____

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N. Y.

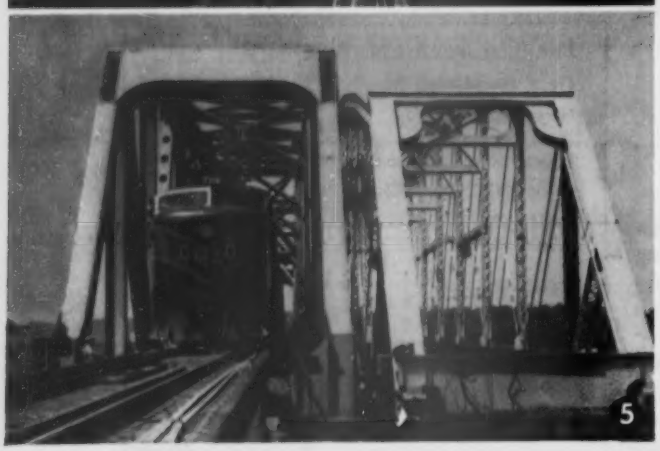
Traffic delayed only 31 hours on this unusual bridge replacement job!

1

2

3

4


5

AMERICAN BRIDGE
floats new bridge onto old piers to give GM&O RR fast service!

THE replacement of the Gulf, Mobile and Ohio Railroad Company's bridge over the Warrior River at Tuscaloosa, Alabama, with a new structure on the existing piers is another good example of how American Bridge handles a difficult job.

The project involved the design, fabrication and erection of the 450-foot bridge (consisting of a 275′ anchor span, a 58′4″ cantilever arm, and a 116′8″ suspension span) on the original piers, and the removal of the old, out-moded bridge.

The entire new bridge (picture #1) was erected on two barges (picture #2) and floated into a temporary position on pier extensions alongside the old structure (picture #3). The old bridge was then moved off its piers (picture #4) and the new bridge rolled onto the existing piers with new rails, crossties and new timbers in place (picture #5).

The changeover was accomplished with a traffic interruption of only thirty-one hours!

Handling unusual jobs like this with such ease and speed has made American Bridge the country's number one builder of railroad bridges. Whether your requirements are for a new line structure, or for an emergency repair or replacement job, American Bridge welcomes your inquiries.

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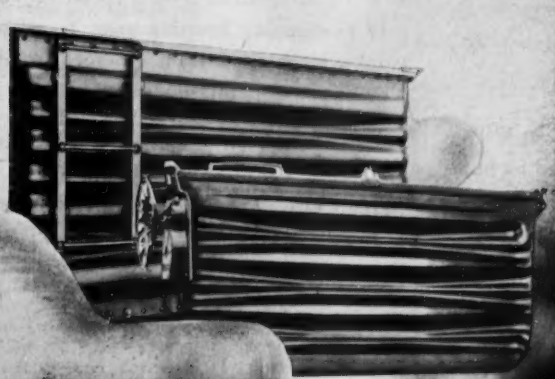

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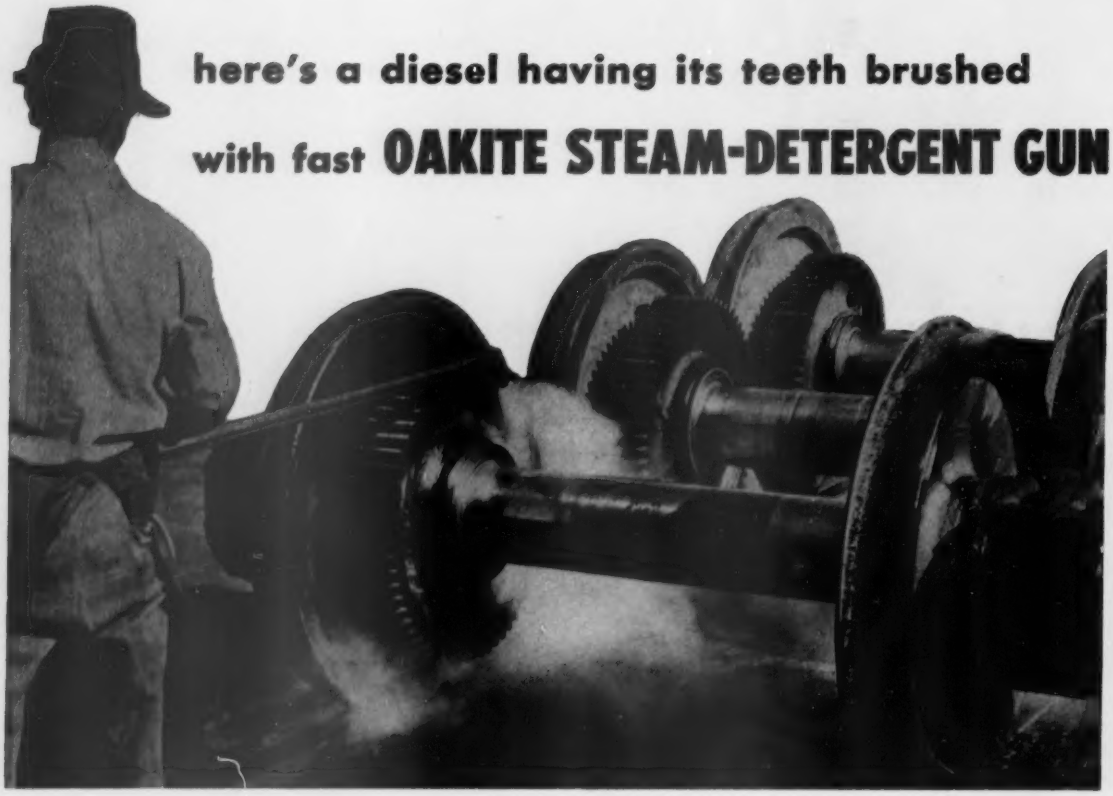
here's a diesel having its teeth brushed with fast OAKITE STEAM-DETERGENT GUN



Removing heavy-duty lubricants from recessed areas is a real tough assignment. And that's what you're up against when you have to remove Crater's Compound from between the bull gear teeth of Diesel driving wheels.

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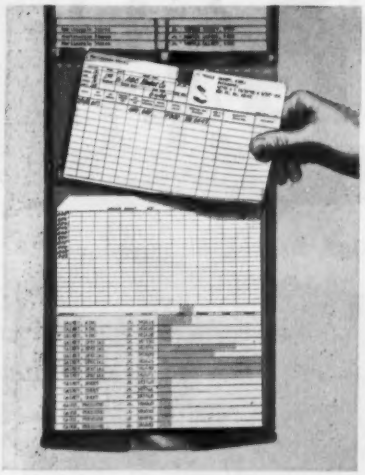

This Kardex inventory system gives you a more effective and speedy inventory control to safeguard against shortages and reduce clerical errors. In each Kardex pocket are two control cards. The lower, or strike-off card remains in the file at all times for posting withdrawals from stock, with the last entry showing the balance on hand. When this balance falls to the order point, the upper card is removed from the pocket and sent to the purchasing department as a requisition. A movable Graph-A-Matic signal, in the visible margin, is set to show at a glance that action has been taken.

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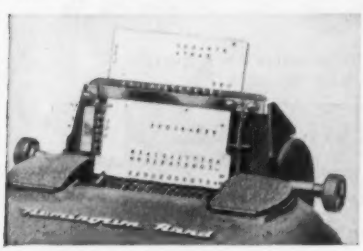

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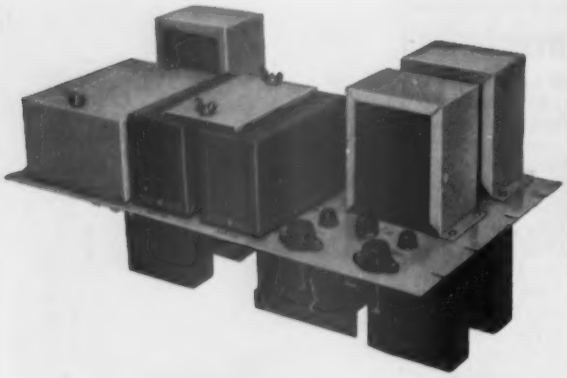

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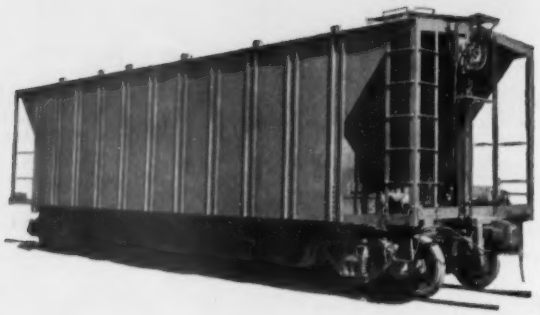

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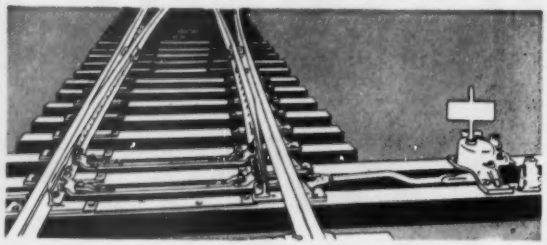

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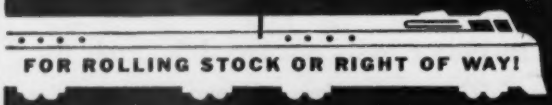

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Buckeye Steel Castings Co., The 23
Byers Co., A. M. ..... Front Cover
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General Railway Signal Co. ..... Back Cover

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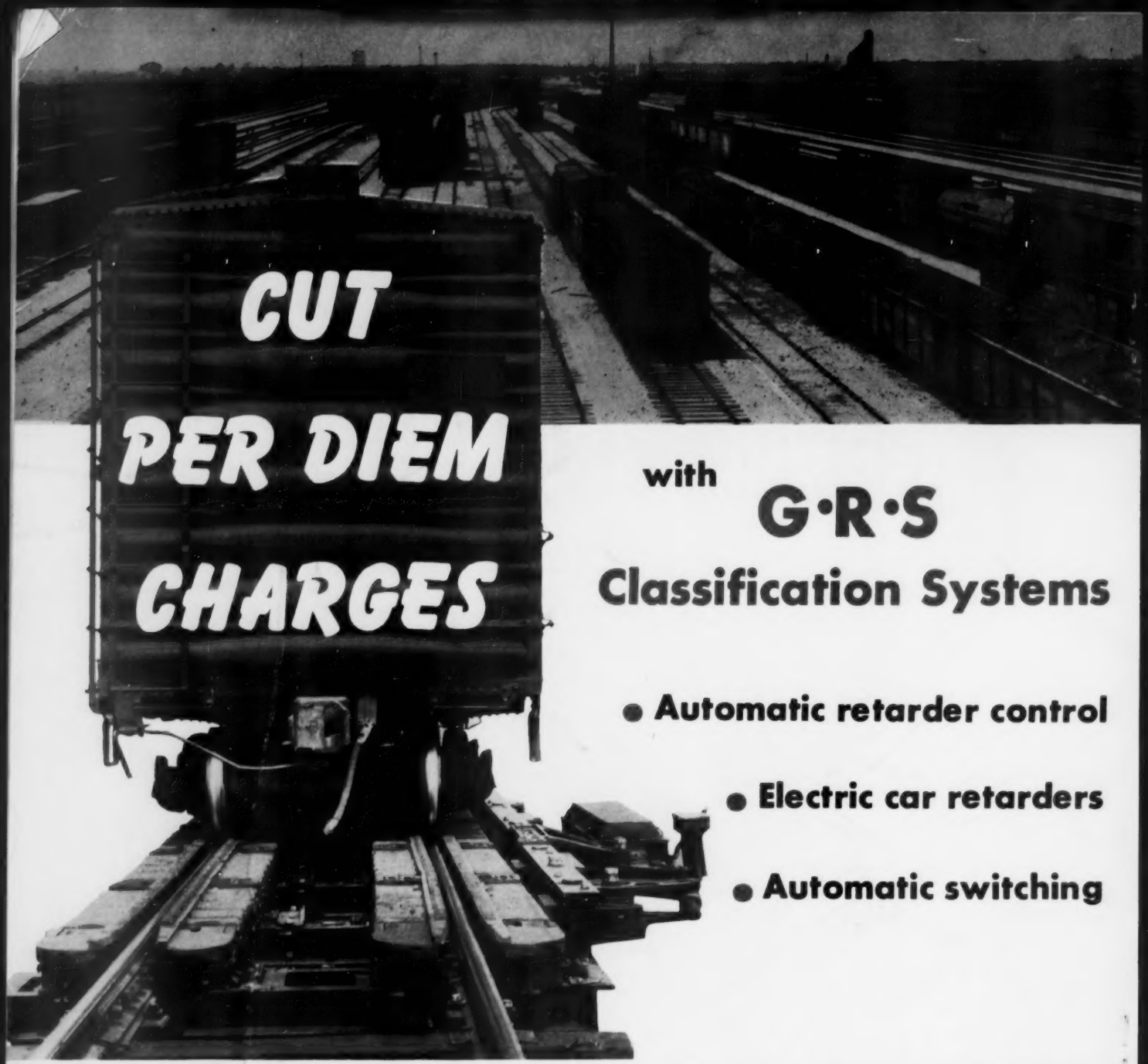

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